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EIGHTEENTH BIENNIAL REPORT

OF THE

Oregon State Highway Commission

1947—1948

L. L. Parsons

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EIGHTEENTH BIENNIAL REPORT

OF THE

Oregon State Highway Commission

For the Period July 1, 1946, to June 30, 1948

OREGON STATE HIGHWAY COMMISSION

T. H. BANFIELD, Chairman
ARTHUR W. SCHAUPP, Commissioner
BEN R. CHANDLER, Commissioner

R. H. BALDOCK, State Highway Engineer
J. M. DEVERS, Chief Counsel
H. B. GLAISYER, Secretary

STATE PRINTING DEPT.

Spectacular Multnomah Falls, 620 feet high, provides a scenic climax for a motor trip through Oregon's Columbia Gorge over the Columbia River Highway.

OREGON STATE HIGHWAY COMMISSION

Former Members and Terms

E. J. Adams, Eugene, February 28, 1917, to March 31, 1918.
W. L. Thompson, Pendleton, February 28, 1917, to Oct. 15, 1919.
S. Benson, Portland, February 28, 1917, to November 15, 1920.
R. A. Booth, Eugene, April 1, 1918, to May 28, 1923.
J. N. Burgess, Pendleton, October 16, 1919, to November 21, 1919.
E. E. Kiddle, Island City, November 26, 1919, to Dec. 28, 1920.
J. B. Yeon, Portland, November 22, 1920, to March 31, 1923.
W. B. Barratt, Heppner, January 8, 1921, to March 27, 1923.
Wm. Duby, Baker, March 27, 1923, to July 31, 1927.
H. B. Van Duzer, Portland, April 1, 1923, to October 7, 1931.
W. H. Malone, Corvallis, May 28, 1923, to March 31, 1927.
C. E. Gates, Medford, April 1, 1927, to March 11, 1931.
Robert W. Sawyer, Bend, August 1, 1927, to May 28, 1930.
M. A. Lynch, Redmond, May 29, 1930, to August 1, 1931.
Chas. K. Spaulding, Salem, March 11, 1931, to February 16, 1932.
Wm. Hanley, Burns, August 1, 1931, to February 16, 1932.
J. C. Ainsworth, Portland, October 8, 1931, to February 16, 1932.
Leslie M. Scott, Portland, February 17, 1932, to March 31, 1935.
Carl G. Washburne, Eugene, Feb. 17, 1932, to October 9, 1935.
E. B. Aldrich, Pendleton, February 17, 1932, to March 31, 1940.
F. L. Tou Velle, Jacksonville, October 9, 1935, to March 31, 1939.
Henry F. Cabell, Portland, April 1, 1935, to February 28, 1943.
Huron W. Clough, Canyonville, April 1, 1939, to April 7, 1943.
Herman Oliver, John Day, April 1, 1940, to March 31, 1943.
Merle R. Chessman, Astoria, April 8, 1943, to October 1, 1946.

Present Members

T. H. Banfield, Portland, ~~appointed~~ ~~February~~ 28, 1943, to Mar. 31, 1950
Arthur W. Schaupp, Klamath Falls, ~~appointed~~ April 1, 1943, to Mar. 31, 1949
Ben R. Chandler, Coos Bay, appointed October 1, 1946.
Chas. H. Reynolds, La Grande, appointed April 1, 1949.
M. K. McIver, Portland, appointed April 1, 1950

TABLE OF CONTENTS

Section One. Report of Highway Commissioners

	Page
GENERAL COMMENTS	7–17
Construction Needs of State Highways	7
Needed Annual Income for State Highway Purposes	8
Increase In Revenues Required To Provide Needed Income	11
Progress Made On First Postwar Federal Aid Program	12
Second Postwar Federal Aid Program	14
Forest Highway Program	14
Low Salaries Are Retarding Progress	15
Congressional Reluctance To Increase Federal Aid	16

Section Two. Report of Highway Engineer

PROGRESS IN HIGHWAY IMPROVEMENT	22–42
General Summary	22
Primary State Highways	24
Secondary State Highways	36
County Roads	40
City Projects	42
CLASSES OF HIGHWAYS	43
FINANCES	65–84
Sources of State Highway Income	65
Incomes, 1947 and 1948	67
Anticipated Incomes, 1949 and 1950	70
Expenditures, 1947 to 1950	70
Federal Participation In Financing Of State Highway Work	75
Forest Highway Work	79
County and City Participation In Revenues	81
REPORT OF CONSTRUCTION DEPARTMENT	85
REPORT OF MAINTENANCE DEPARTMENT	91–99
Organization	92
Maintenance of Pavements and Bituminous Surfacings	92
Bridge Maintenance	93
Maintenance of Buildings	93
Slides	94
Signs, Signals and Traffic Lines	95
Equipment	95
Cost Statements	96
REPORT OF BRIDGE DEPARTMENT	101
REPORT OF TRAFFIC ENGINEERING DIVISION	105–112
Traffic Control	105
Planning Survey	110
REPORT OF MATERIALS DEPARTMENT	113
REPORT OF LEGAL AND RIGHT OF WAY DEPARTMENT	115
REPORT OF STATE PARKS DEPARTMENT	117
REPORT OF TRAVEL INFORMATION DEPARTMENT	123
MISCELLANEOUS ACTIVITIES	125

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Section Three. Financial and Statistical Information

		Page
Table No. 1.	Detailed Summary of Income and Expenditures	131
Table No. 2.	Summary of Expenditures	133
Table No. 3.	Mileages of Highway Construction Work Performed	134
Table No. 4.	Mileages of State Highways Maintained	135
Table No. 5.	State Funds Received and Expended, 1917 to 1948	136
Table No. 6.	Yearly Expenditures by Funds, 1917 to 1948	137
Table No. 7.	Summary of Expenditures by Major Items, 1917 to 1948	138
Table No. 8.	Summary of Expenditures, 1917 to 1948	139
Table No. 9.	Incomes from Different Sources, 1917 to 1948	140
Table No. 10.	Expenditures for Different Purposes, 1917 to 1948	142
Table No. 11.	Construction Expenditures, Primary Highways	146
Table No. 12.	Maintenance Expenditures, Primary Highways	148
Table No. 13.	Primary Highway Construction Expenditures by Counties	149
Table No. 14.	Primary Highway Maintenance Expenditures by Counties	150
Table No. 15.	Secondary Highway Construction Expenditures by Counties	151
Table No. 16.	Secondary Highway Maintenance Expenditures by Counties	152
Table No. 17.	County Road and City Street Construction Expenditures by Counties	153
Table No. 18.	County Road and City Street Maintenance Expenditures by Counties	154
Table No. 19.	Forest Highway Expenditures by Counties	155
Table No. 20.	Forest Highway Expenditures by Highways	156
Table No. 21.	Forest Highway Statistics by Years	157
Table No. 22.	County Disbursements for Road Purposes	159
Table No. 23.	State Highway Bond Indebtedness	160
Table No. 24.	State Highway Bonds Issued and Retired	161
Table No. 25.	County Indebtedness for Road Purposes	162
Table No. 26.	Apportionment of Motor Vehicle Revenues to Counties	163
Table No. 27.	Apportionment of Motor Vehicle Revenues to Cities	164
Table No. 28.	Mileages of Primary State Highways	168
Table No. 29.	Mileages of Primary Highways by Counties	169
Table No. 30.	Mileages of Secondary State Highways	170
Table No. 31.	Mileages of Secondary Highways by Counties	172
Table No. 32.	Mileages of County Roads	173
Table No. 33.	List of Persons Rendering Special Services	174
Map of State Highway System—Opposite Page		176

LETTER OF TRANSMITTAL

Salem, Oregon

January 1, 1949

HONORABLE JOHN H. HALL,
Governor of the State of Oregon.

Dear Sir:

In compliance with the provisions of section 100-115, O. C. L. A., we have the honor of presenting to you the report of the Oregon State Highway Commission for the period from July 1, 1946, to June 30, 1948.

Respectfully yours,

OREGON STATE HIGHWAY
COMMISSION,

T. H. BANFIELD, Chairman,
ARTHUR W. SCHAUPP, Commissioner,
BEN R. CHANDLER, Commissioner.

BIENNIAL REPORT

OF THE

Oregon State Highway Commission

Fiscal Years 1947 and 1948

Section One

GENERAL COMMENTS

Construction Needs of State Highways:

Under authority of a resolution passed by the State Legislature in 1947, there was created an interim committee for the purpose of making "a complete and exhaustive study of the transportation facilities of the state, including state highways, county roads and city streets" and of "determining the immediate and future needs and requirements with respect to the construction and maintenance of public thoroughfares of the State of Oregon."

As a first step in its study, this interim committee, known as the "Legislative Interim Committee for the Study of Highway, Road and Street Needs, Revenue and Taxation," following like action by a similar and earlier legislative committee in the State of California, obtained from the Automotive Safety Foundation the loan of the body's trained staff of engineers and technicians to conduct for it the engineering surveys, investigations and analyses essential to the "need" portion of the Committee's study. The work of this staff of engineers extended over some eleven or twelve months and was reported on comprehensively by the Automotive Safety Foundation in a report entitled "Highway Transportation System in Oregon—Present and Future Needs."

With regard to the State Highway System, the report of the Automotive Safety Foundation shows the need for construction

(maintenance and operating expenses not included) to be as follows:

	Miles	Cost
Immediate Construction Needs	1,272	$133,884,000
Future Construction Needs	5,483	334,955,000
Total Construction Needs	6,755	$468,839,000

Immediate needs are defined as improvements needed to correct deficiencies which are currently intolerable and in need of remedy at once.

Future needs are defined as improvements which will be needed to meet anticipated traffic demands of the next ten years. (Future needs are additional to immediate needs).

These findings of the Automotive Safety Foundation with respect to state highway construction needs conform closely with a construction need estimate made by the State Highway Engineer in 1946, which estimate was reported upon and discussed on pages 19 to 26 of the Biennial Report of the State Highway Commission for the 1945-46 biennium. The Highway Commission feels, therefore, that the estimates of the construction needs of the State Highway System as made by the engineers of the Automotive Safety Foundation may be accepted as being substantially in line with its own determinations.

Needed Annual Income for State Highway Purposes:

Of the annual income required to finance needed improvements and to at the same time finance the costs of highway maintenance and administration, the Automotive Safety Foundation made three estimates, one contemplating completion of the improvement program in ten years, the second contemplating completion in fifteen years and the third contemplating completion in twenty years. These estimates are as follows:

	Average Annual Income Needed		
	For Construction	For Maintenance and Administration	Total
10-year program basis	$43,584,000	$ 9,613,000	$53,197,000
15-year program basis	30,163,000	8,911,000	39,074,000
20-year program basis	24,066,000	8,841,000	32,904,000

Before accepting these estimates of needed income, consideration should be given to the fact that they are based on the premise that costs will drop, in five years, from a present

index of 210, as determined by the Public Roads Administration, to an index of 150, remaining constant thereafter at 150. Figured back to present day cost levels the Safety Foundation's estimates of needed average income would be:

10-year program basis	$66,800,000
15-year program basis	51,300,000
20-year program basis	43,900,000

There is much reason to believe that costs may hold at their present levels for many years or that they may even go higher. It appears therefore that the determination of needed income for the long time program is subject to much uncertainty and speculation. For that reason, the Highway Commission suggests that, for the present, the amount of needed income be determined from the cost of immediate needs with the thought that such determination be revised later, if necessary, as conditions reveal themselves and become more definite. In a determination based on immediate needs there would be no speculation necessary as to cost trends.

The immediate improvement needs of the state highway system as estimated by the Safety Foundation and confirmed by the Highway Commission total $133,884,000. These needs, defined by the Foundation as needs to overcome "intolerable" deficiencies, are needs which should be met "immediately" but which, by reason of the extent of the construction involved, cannot practicably be completed in less than three, four or even five years. If it is assumed, then, that the cost of these immediate need improvements may be spread over a period of five years, the average annual cost of the improvements would be $26,777,000.

It would be reasonably safe, the Highway Commission feels, to expect that during the period the immediate need program is in progress, the Federal Government will continue its policy of cooperating with the states in the improvement of federal aid highways and forest highways. Such cooperation is already assured for two years by provisions in the Federal Aid Highway Act of 1948, cooperation during those two years being at the rate of $6,325,000 per year for federal aid highways and $2,700,000 per year for forest highways, a total of $9,025,000 per year. Not all of this federal money can be used on state highways, but experience indicates that $8,000,000 may be

expected from that source each year for use on state highways. It thus appears that the amount of state funds required to finance this "immediate need" program will average $18,777,000 per year ($26,777,000 less $8,000,000).

When consideration is given to the probability that highway income will increase at a rate of, say, four per cent per year during the five years the program will be in progress, it becomes apparent that the financing problem may be eased by spending less during the first years and more during the later years. Thus, the required average amount of $18,777,000 may be attained by an expenditure increasing from $17,350,000 the first year to $20,300,000 the fifth year.

Up to this point, this discussion of state highway needs and needed income for state highway purposes has concerned only the needs of highway improvement and the income required to provide for improvement needs. State highway income must include, also, provision for highway maintenance, highway operation, surveys, parks, administration and certain other incidental items. As of the years 1949 and 1950, the average annual total cost of these expenses, additional to highway improvement, is $15,325,000. It comprises the following:

Highway maintenance	$10,000,000
Highway minor betterments	750,000
Administration	1,100,000
Operational expenses:	
Operation of drawbridges and ferries	150,000
Truck load inspection	165,000
Operation of Travel Information Bureau	250,000
Operation of State Parks	185,000
Traffic surveys and planning investigations	225,000
Contributions to employees' retirement fund	420,000
Contribution to civil service and state restoration fund	30,000
Surveys	400,000
Park acquisition and improvement	200,000
Buildings and property improvements	500,000
Additions to maintenance equipment inventories	250,000
Additions to maintenance rock inventories	250,000
Interest and principal payments on bonds	450,000
Annual Total	* $15,325,000

* The average amounts for maintenance and administration as estimated by the Safety Foundation ($8,841,000 to $9,613,000, depending on the length of the program period) are not comparable with this estimate for the reason that the Foundation estimates do not include many of the essential items included in this estimate of $15,325,000 and for the further reason that the Foundation estimate contemplates price reductions up to 30 per cent which may not be in effect for several years, if ever.

When, to the amount of $17,350,000 required for the first year of the proposed five-year improvement program, there is added the $15,325,000 required annually for maintenance, operation, administration, et cetera, it developes that the needed state fund income for state highways, year 1949 or 1950, is $32,675,000.

Increase in Revenues Required to Provide Needed Income:

If collection and distribution of motor vehicle revenues are to continue through 1949 and 1950 on the same basis as obtained in 1948, plus normal increases, the estimated annual income from those revenues for the first program year will be as follows:

Motor vehicle license fees and operators' fees	$ 3,300,000
Gasoline tax	22,200,000
Motor transportation fees	4,900,000
Fines for traffic law violations	245,000
Total annual average	$30,645,000

Of this total, the counties will receive 19 per cent or $5,822,500, the cities will receive 10 per cent or $3,064,500, and the State Police Department will receive $970,000. The remaining $20,788,000 will accrue to the State Highway Commission as the amount available for state highway purposes.

It has been stated hereinbefore that to enable the carrying on of the improvement program as proposed, the income of state funds for state highway purposes, as of the years 1949 or 1950, must be at least $32,675,000. When this is compared with the presently prospective income of $20,788,000, it becomes evident that there is needed an increase in revenue for state highway purposes of approximately $11,900,000. In case this increase is to be obtained by an increase in motor vehicle revenues, which is to be shared by the counties and cities as are the present motor vehicle revenues, the total revenue increase required will be $16,750,000.

The Highway Commission can merely point out the problem. The Legislature will, of course, decide the final action. Highways affect the lives of all people. The growth and expansion of the state's economy is dependent upon the modernization

of the main trunk highways, which carry the "life blood" of the state's commerce. Paradoxically, failure to improve many roads may cost more than the increase in taxes requisite to make the improvement. During the depression, there was little money for road improvement. During the war, Congress forbade road construction save that necessary in the war effort. In consequence, for 12 years there was a slow bell in road construction and as a result, a vast backlog of deferred jobs has accumulated. Failure to restore depreciation currently has materially increased the cost of road modernization. When it is further considered that the road dollar has been cut in half in so far as buying power is concerned, it is readily apparent that the State Highway Commission can not do the impossible and that more funds must be provided for needed road construction in order that Oregon's forward economic stride be not retarded.

Progress Made on First Postwar Federal Aid Program:

Under a Federal Aid Act passed by Congress in 1944, authorization was given for federal aid to highways in the amount of $500,000,000 for each of the three fiscal years 1946, 1947 and 1948. Of this amount, Oregon's annual share was $7,084,363, comprising $3,728,908 for Federal Aid Primary Highways, $2,544,582 for Federal Aid Secondary Highways and $810,873 for Federal Aid Primary Highways in Urban Areas. As a condition to obtaining these federal monies, the State is requested to provide match money on a basis approximating 40 per cent of state money to 60 of federal money. The combination of federal and state money amounted to $12,000,000 per year or $36,000,000 for the three-year period.

To utilize the monies here referred to, the Highway Commission developed a three-year program of highway improvement estimated to cost $36,000,000 and, in November 1945, began the contracting of this program. As of December, 1948, eighty-three per cent of the program is completed or under contract, and by June of 1949 the whole of the program will have been contracted. In progress thus far made in the contracting of their respective programs, Oregon is reported to stand seventh among all of the States.

The period during which the contracting of this program has been in progress has been one of rising prices. When the program was adopted in 1945, it was anticipated that costs might average as much as 50 per cent above costs of 1941. Increases actually experienced have run as high as 100 per cent above 1941 costs and, for the three-year period concerned, have averaged about 75 per cent. Present costs are about 90 per cent above costs of 1941. As a result, the program which was expected to cost $36,000,000, will, even after considerable cutting back of projects, cost approximately $40,000,000.

In order that the increase in program cost here indicated may not have to be borne in its entirety by the State, arrangements have been made whereby projects having a total cost of about $3,000,000 will be transferred from this first postwar program to the second postwar program now in process of development as hereinafter described. This transfer of projects will enable the State to obtain federal participation in the extra cost which has resulted from price advances, but it will at the

Bridge over Pudding River on the Pacific Highway East at Aurora. Completed in 1947.

same time reduce, by about $3,000,000, the amount available for new projects in the second postwar program.

Second Postwar Federal Aid Program:

By an act known as the "Federal Aid Highway Act of 1948" passed by Congress in June, 1948, federal aid for highways has been authorized in the amount of $450,000,000 for each of the two federal fiscal years 1950 and 1951. Oregon will share in these federal aid funds in the amount of $6,325,000 per year. Of this amount, a part is allotted for use in primary federal aid highways, another part is allotted for use on secondary federal aid highways and a third part is allotted for use on primary federal aid highways within urban areas. The amounts allotted to these several uses, the amounts of State funds required to match the federal funds, and the combined totals are as shown in accompanying Table I.

The construction program on which these federal and state funds will be used will be called the "second postwar federal aid program." Its total will be $21,200,000, but due to its having to absorb $3,000,000 of projects transferred to it from the first postwar program, as hereinbefore described, it can include new projects to the amount, only, of $18,200,000. The breakdown of this amount as between primary, secondary and urban projects is as follows:

Primary Highway Projects	$ 9,400,000
Secondary Highway Projects	7,400,000
Urban Highway Projects	1,400,000
	$18,200,000

Studies from which to develop the new program are now in progress and contracting of the projects is expected to begin in the spring of 1949.

Forest Highway Program:

In the Federal Aid Highway Act of 1948, authorizations of $20,000,000 were made for Forest Highway for each of the federal fiscal years 1950 and 1951. Of these authorizations, the amounts to be expended in Oregon are approximately $2,800,000 per year or $5,600,000 for the two-year period covered.

In addition to this $5,600,000 of forest highway authorizations, there remained, as of July, 1948, an unprogrammed and uncontracted balance of funds previously authorized for forest highway (fiscal years 1946 and 1947) of approximately $4,800,000. Therefore, as of July, 1948, Oregon's total share of forest highway funds available to be programmed was $10,400,000. Of this amount, $2,120,000 was programmed in July, 1948. At the same time, projects totalling $4,480,000 were tentatively designated for inclusion in subsequent programs. The remaining unprogrammed balance of $3,800,000 is needed and is tentatively planned to be used on projects which earlier had been listed for improvement with funds allocated for the fiscal year 1948 but later withdrawn by congressional action.

Federal forest highway funds are expended on the Forest Highway System by the Public Roads Administration without any required cooperation or matching on the part of the State.

TABLE I

Estimate of Oregon's Allotment of Funds Under Federal Aid Highway Act of 1948

(Amounts given are the amounts for each of the fiscal years 1950 and 1951)

Class of Projects	Oregon's Share Federal Funds	State Match Money: Net Cooperation (Av. 37.94%)	State Match Money: Extra for Non-participating Items	State Match Money: Total State Funds	Total Federal Plus State Funds
Federal Aid Primary Highways	$ 3,330,000	$ 2,040,000	$ 230,000	$ 2,270,000	$ 5,600,000
Federal Aid Secondary Highways	2,275,000	1,390,000	135,000	1,525,000	3,800,000
Federal Aid Urban Highways	720,000	440,000	40,000	480,000	1,200,000
Totals	$ 6,325,000	$ 3,870,000	$ 405,000	$ 4,275,000	$10,600,000

Low Salaries Are Retarding Progress:

Salaries that may be paid to engineers in Oregon under present civil service regulations are considerably below those paid by neighboring states, by the federal government and by industry. The result is that recruitment of needed qualified personnel is impossible and the retention of the more able of those in the employ of the department is becoming more difficult. With this situation obtaining, the engineering organization is deteriorating and the work of the department is being

throttled. Progress in work performance is being retarded and in the endeavor to keep pace with growing income and growing construction need, planning and the engineering of construction is being slighted with resultant loss and extra cost.

Engineering graduates of Oregon State College refuse to accept employment with Oregon's highway department due in part to low beginning salaries and in part to low salaries in the higher positions to which they may aspire.

The acute shortage of engineers which has obtained throughout the nation since termination of the war has made competition for the services of engineers more keen than competition in almost any other line of work. If Oregon fails to meet this competition, it cannot but suffer severely for years to come in the efficacy of its highway expenditures.

Congressional Reluctance to Increase Federal Aid:

Proponents of increased federal aid for highways are finding it more and more difficult to interest the Congress either in increasing the amounts of federal aid or in making early authorizations in the same amounts as were granted for the first postwar federal aid program. Only with great effort, and then at the very closing hour of the congressional session, was it possible to obtain passage of the 1948 Act making authorizations for the fiscal years 1950 and 1951. The act as passed not only provided no increase in annual amount over that authorized in 1944 for the fiscal years 1946 to 1948, but it actually lowered the amount from $500,000,000 to $450,000,000.

The above described attitude of the Congress seems to have been induced by the fact that not all of the states have made desired progress in the accomplishment of work under the three-year authorization made in 1944 for the fiscal years 1946, 1947 and 1948. When it is considered that the period from 1944 to 1948 was a period during which many obstacles were in the way of expeditious contracting and performing of heavy construction work, this attitude on the part of the Congress was probably, in some degree at least, unwarranted. However, it was, and probably still is the attitude of the Congress, and if that attitude is to be allayed before it comes

time for another federal aid authorization, all states will have to bend every effort to have their 1950-51 allotments under contract and well along toward completed construction. For Oregon to do this and to thereby encourage increased federal aid for highways, two actions are required. First, there must be provision for additional state highway income as other portions of this report will show, and second, there must be increases in the pay scale for highway engineers which will enable expansion of the engineering organization to an extent which will make possible a speeding up of the planning of the needed highway improvements.

The Toll Creek-North Santiam Junction Section of the Santiam Highway was oiled under a Forest Highway contract.

Section Two

REPORT

OF THE

State Highway Engineer

TO THE

State Highway Commission

OF THE

STATE OF OREGON

1947-1948

R. H. BALDOCK, State Highway Engineer

LETTER OF TRANSMITTAL

Salem, Oregon,

January 1, 1949

To the Honorable State Highway Commission,

T. H. Banfield, Chairman,
Arthur W. Schaupp, Commissioner,
Ben R. Chandler, Commissioner.

Gentlemen:

I have the honor to submit to you herewith the report of the State Highway Engineer for the period July 1, 1946, to June 30, 1948.

Respectfully yours,

R. H. BALDOCK,
State Highway Engineer.

Section Two

REPORT OF THE STATE HIGHWAY ENGINEER TO THE STATE HIGHWAY COMMISSION

1947-1948

INTRODUCTION

In this section of the report are given, first, an outline of the progress made in highway improvement during the biennium; second, descriptions of the several classes and systems of the highways with which the Department has to deal; third, a discussion of the department's finances, its sources of income, the amounts of its income and the amounts of its expenditures; and fourth, reports by some of the subdivisions of the department's organization on the activities of those subdivisions. The subjects mentioned will be found under subheads as follows:

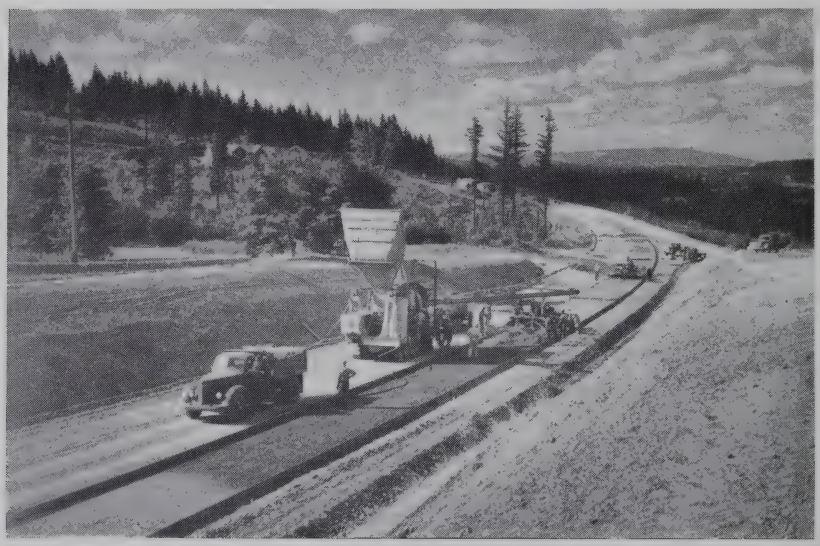
	Page
Progress in Highway Improvement	22
Class of Highways	43
Finances	65
Report of Construction Department	85
Report of Maintenance Department	91
Report of Bridge Department	101
Report of Traffic Engineering Division	105
Report of Materials Department	113
Report of Legal and Right of Way Department	115
Report of State Parks Department	117
Report of Travel Information Department	123
Miscellaneous Activities	125

PROGRESS IN HIGHWAY IMPROVEMENT

General Summary

The years 1947 and 1948 have witnessed the completion of 112 highway construction projects and 79 bridges under the supervision of the State Highway Department. That highway construction and improvement has been accelerated during this period is evident when compared with the preceding two-year period during which but 53 projects and 9 bridges were completed. A comparison of total miles of highway improvements completed during the respective periods also bears out the fact that the last two-year period has been one of commendable activity by the Department. During 1945 and 1946, a total of 453 miles of road construction work of one type or another was performed, while during 1947 and 1948 the total was 1,438 miles.

The 112 roadway projects completed during the 1947-48 two-year period were distributed over the state-wide system of roads as follows: 56 projects on 27 of the state primary highways; 41 projects on 32 of the state secondary highways; 7 projects on 7 county roads on the federal secondary system;



Portland cement concrete paving operations on Highway No. 51 near Tigard in Washington County.

and 9 projects in 9 cities on city streets lying outside of state or federal routes. The mileages of the various types of work accomplished under these 112 projects are as follows:

TABLE II

Classification of Work	Primary Highways (Miles)	Secondary Highways (Miles)	Other Roads and Streets (Miles)
Concrete paving	17.5	.....	.....
Bituminous paving	53.6	22.9	14.4
Bituminous macadam surfacing	37.0	6.4	5.0
Oil mat surfacing	131.9	230.0	35.8
Rock and gravel surfacing	223.8	247.3	53.2
Grading	178.2	161.4	19.4
Bridges (number of)	63	11	5

As of December 31, 1948, the status of improvement of the two state highway systems under the jurisdiction of the State Highway Department is as follows:

TABLE III

Type of Improvement	Primary Highways (Miles)	Secondary Highways (Miles)
Concrete pavement	336	47
Bituminous pavement	538	173
Bituminous macadam surface	1,268	67
Oil mat surface	2,350	1,316
Rock or gravel surface	157	513
Graded only	98	135
Unimproved	73	227
Totals	4,820	2,478

The status of improvement of each of the 56 state primary highways, of each of the 123 state secondary highways, and of roads and streets other than those on these two highway systems is shown in detail in Section Three of this report. The "unimproved" highways shown in Table III include surveyed relocations of existing travelable roads which have not yet been constructed to improve standards, as well as existing travelable routes on which no improvement with state funds has yet been made. It will be noted that 84 per cent of the total mileage in the two state highway systems has been brought to the status of an oiled or higher type of riding surface.

The two-year period covered by this report has been one of considerable activity in highway construction. Due in large

part to the advance planning of the Department during the war period and the early programming of a three-year postwar construction plan, it became possible for Oregon to swing into action in road building far in advance of the national average. As is true in any long-range program, the accomplishments lag the initiation of activity. However, at the end of 1948, 83 per cent of the planned three-year program has been either completed or placed under contract. The progress in highway improvement during the biennium is more significant when it is appreciated that it has been made under trying and difficult conditions which include (1) a continuing shortage of supply in some construction materials, (2) a steady rise in construction costs, (3) a serious shortage of experienced engineering personnel, and (4) a diminishing revenue relative to need.

Contrasted with the expanding needs of highway improvement, both immediate and long-range, the progress shown in past years has not been sufficient. The road systems under jurisdiction of the State Highway Commission are not being improved as rapidly as should be the case; road service to the users is not keeping pace with the growth and development of the State as a whole.

A brief review of the major projects completed during 1947 and 1948, with emphasis placed on their contribution to the general improvement of the highway systems, is given below.

Primary State Highways

On the primary state highway system, the improvements completed during the two-year period involved the construction of 63 bridges and 56 road construction projects. The roadway construction projects were located on 27 of the 56 primary highways and in 23 of the 36 counties in the state.

Expenditures made during the biennium for all construction activities on the state primary system amounted to $15,308,337.

A brief description of the major construction projects completed during 1947 and 1948 on the state primary system follows:

Pacific Highway, U. S. Nos. 99W, 99E and 99: On the Pacific Highway West (U. S. No. 99W), the Sheridan Street-Bancroft Street Unit of the Front Avenue Project in Portland has been

completed and put into service. This project, the most southerly unit of the Department's long-range plan for the handling of this highway's high-volume traffic into and through Portland, provides complete segregation of city traffic from through traffic by means of multiple lanes, ramps, subways and viaducts; affords free-flowing access to the city center, the Oswego Highway, connection to the Pacific Highway East via the Ross Island bridge, and to intersecting city thoroughfares; materially speeds up traffic flow and greatly reduces the hazards formerly associated with the traffic congestions common to urban development. Another project contributing to the speeding-up and hazard-reducing function of modern highway construction has been completed in the southerly part of McMinnville and extending for nearly one mile to the junction of Highway 99W with the Salmon River Highway leading to the coast. A four-lane divided highway has here been provided, with controlled access and planned provision for present and future developments. On Harrison Street in Corvallis, the city street has been widened and paved to serve as a one-way artery in conformance with the overall plan worked out between the City and the Highway Department for the routing of traffic in a safe and expeditious manner through that City.

On the Pacific Highway East (U. S. No. 99E), a 0.23 mile section in the vicinity of Jantzen Beach was widened and provided with improved access to the adjoining local congested area by means of an adequate separation structure and separated traffic lanes of ingress and egress thereto. Between Oregon City and New Era, a 5.93 mile section of highway previously of hazardous alignment and narrow width has been widened to furnish four-lane paved service to the traveling public. The resulting acceleration of traffic and driver-tension relief on this section is a mark of real progress in the improvement of this important highway. At the crossing of the Pudding River, near Aurora, a new 30-foot width concrete and steel bridge and 0.25 mile of asphaltic concrete paved approaches thereto have replaced the former narrow structure and roadway which had presented a serious hazard to the traveling public. Another major improvement is the Steiwer Hill-Albany relocation which provides a 9.85 mile section of new 24-foot Portland cement concrete pavement, a 900-foot new steel and

Artist's drawing of traffic interchange at S. W. Front Avenue at west end of Ross Island bridge, Portland.

concrete bridge over the Santiam River, a 395-foot concrete railroad-highway separation structure and ten smaller concrete structures. This improvement, constructed at a cost of $1,558,-650, is a controlled access project on right of way of ample width to permit construction of a future paralleling two-lane highway when a divided, four-lane highway thus created becomes feasible. The completion of this section now provides a time-saving and safe travelway between Salem and Albany in high contrast to the former narrow route.

On the Pacific Highway south of Junction City (U. S. No. 99), the major improvement during the two-year period has been the completion of a 12.78 mile section between Cow Creek Station and the town of Wolf Creek, replacing a 14.5 mile unit of the old, narrow highway. This project, in conjunction with previously modernized highway sections adjoining on the south, provides a minimum 22-foot width of bituminous surfacing with additional traffic lanes over summits and ascending grades for a 23-mile portion of the highway through the mountainous area which hitherto had been traversed by one of the narrowest and most tortuous highway locations on the entire highway.

At Ashland, the Plaza Section in the heart of the city has been improved by means of the flattening of curvature, the directional channelization of traffic and the reconstructing of side street intersections. The local and through traffic movements have thus been provided for and the former confusion and congestion eliminated.

Expenditures made during the biennium for construction work on the Pacific Highway (U. S. Nos. 99W, 99E and 99) amounted to $7,757,650.

Columbia River Highway and Old Oregon Trail, U. S. No. 30: On this route, seven projects have been completed during 1947 and 1948; 0.37 mile of asphaltic concrete paving on the Bond Street-Commercial Street Section in Astoria, 1.0 mile of street widening and asphaltic concrete paving at Parkrose, 6.07 miles of grading on the Troutdale-Wahkeena Creek Section, 5.36 miles of grading and oiled surfacing between Umatilla and Hermiston, 1.13 miles of grading and asphaltic concrete paving in Pendleton. 0.75 mile of asphaltic concrete paving in Ontario, and 0.40 mile of similar paving in Nyssa. The projects in

Astoria, Parkrose, Pendleton, Ontario and Nyssa involved the widening and general improvement of city streets on the main highway route to provide for local parking and commercial use thereof without interference with or delay to the through traffic. The new water-level route of the highway between Troutdale and Dodson has been brought another step closer to completion by the finishing of hydraulic-dredged enbankment construction as far east as Wahkeena Creek and the placing of roadbed topping materials, thus bringing the 13.2 mile section from the Sandy River to Wahkeena Creek to a condition ready to receive the final travelway surfacing. During the period, also, the 4.5 mile Forest Road project extending from Wahkeena Creek to the Dodson connection with the present highway has been in the process of being graded and bituminous macadam surfaced under the supervision of the Federal Public Roads Administration. Contracts have now been let for work which, upon completion in 1949, will make the entire route from Troutdale to Dodson available to traffic. Another major improvement on this route involved the construction of the Umatilla Dam-Hermiston Section of the Old Oregon Trail from its northerly terminus about two miles east of Umatilla extending southerly 5.36 miles on new location to Hermiston. This project eliminates a former hazardous railroad grade crossing near Hermiston and provides a safer, faster route for through traffic and the heavy traffic developing between Hermiston and the McNary Dam area.

Expenditures for construction work on U. S. Route No. 30 during the biennium amounted to $2,807,064.

The Dalles-California Highway, Oregon Nos. 23 and 50, and U. S. No. 97: In addition to a 0.37 mile street widening project in Madras, two major improvements on this route have been made. Beginning at the south end of a previously constructed high-standard section near Juniper Butte (about 10.4 miles south of Madras), a 6.82 mile project of like construction has been completed to the Crooked River Bridge. This bituminous macadam surfaced highway lies as much as one-half mile westerly of the old highway, providing improved line and grade and saving 1.35 miles of travel distance.

The completion of the new location of this route between the East Diamond Lake Highway junction and Lobert, a dis-

tance of 38.94 miles via the new highway, marks a major step in the improvement of the route. The relocation saves 3.54 miles of travel distance, reduces maintenance and snow removal costs and provides a 22-foot oiled travelway on improved line and grade throughout. Separation of traffic at the Chiloquin Junction has been provided by means of an overcrossing structure; while at the Lobert Junction, traffic interchange has been provided for through multiple-lane channelization.

The First Avenue-Esplanade Street Section in Klamath Falls, involving 1.8 miles of grading and bituminous macadam surfacing, the reconstruction of a concrete bridge and 0.12 mile of Portland cement concrete pavement has been placed under contract and is nearing completion at the time this report is written. The project extends from the north city limits southeasterly along the easterly side of the Southern Pacific Company railroad to Esplanade Street and includes the improvement of Esplanade Street from Alameda Avenue to Spring Street. This improvement will provide four-lane traffic service into the heart of the city from the north and is planned to become a part of future highway development to the south. An interesting feature of this project is the provision made for heating the concrete pavement and thus preventing ice hazards,

A section of the 39-mile relocation on U. S. 97 north of Klamath Falls.

on the Esplanade Street unit by means of embedded pipes carrying a solution heated from the natural hot springs in the vicinity. Details of this unique safety provision are set forth elsewhere in the Report of the Bridge Department.

Expenditures for construction on The Dalles-California Highway during the biennium amounted to $1,764,261.

John Day Highway, Oregon No. 19 and U. S. No. 28: Between Unity Junction and Ironside, a 20.65 mile section has been improved from a rock surfaced travelway to that of a 20-foot oiled surface on a strengthened rock base. The improvement was made at a cost of $338,000.

Central Oregon Highway, U. S. No. 20: During the two-year period covered by this report, a 24.10 mile unit of this route between Millican and Brothers has been given a 20-foot oiled mat wearing surface treatment of variable thicknesses which has strengthened the previous light oil treatment and brought the section to improved service condition. This improvement involved an expenditure of $156,800.

Oregon-Washington Highway, Oregon No. 11: A major improvement between Milton and the Washington State line has been completed and placed in service. This project, 5.44 miles in length, involved the resurfacing with asphaltic concrete of nearly 0.8 mile of Main Street in Milton, the construction of 4.71 miles of 2½-inch bituminous macadam surfacing of minimum 24-foot width, the construction of two stream crossing structures, one traffic separation structure and one railway-highway separation structure; together with extensive ramps, side street approaches and connections to serve local interests in Milton and Freewater. The major portion of the improvement lies about three-fourths of a mile easterly of the old highway and connects with a recently reconstructed section in Washington at the State boundary. This modern highway improvement shortens the travel distance to the State boundary by 0.55 mile, eliminates a hazardous railroad crossing at grade, and provides accelerated and safe transportation for local residents and through traffic alike.

Expenditures for construction on the Oregon-Washington Highway during the biennium amounted to $403,660.

Oregon Coast Highway, U. S. No. 101: Three improvement projects have been completed on this route during the 1947-48

period: the Circle Bridge-Summit Section in Clatsop County, the Miner Creek-Agate Beach Section in Lincoln County, and a widening project at Waldport. The first-named project comprised the construction on new alignment of 1.28 miles of a bituminous macadam surfaced roadway near the center of the Cannon Beach Junction-Cannon Beach Section of highway, replacing the old, narrow and twisty road which had been entirely inadequate and highly hazardous.

The Miner Creek-Agate Beach Section is of special interest as it is the first completed project of the long-range plan of relocating and modernizing the highway between Kernville and Newport. The new route of this recently opened section lies close to and paralleling the coast line for a major part of its length, affording hitherto unobtainable vistas of the ocean and opening many roadside recreational possibilities for development. The construction provides a 22-foot bituminous macadam travelway, flanked with wide shoulders and supported on a 16-inch thickness of rock base materials. This completed section, 4.27 miles in length, saves 0.5 mile in travel distance and replaces a section of old highway which was

Relocated section of the Oregon Coast Highway north of Agate Beach in Lincoln County.

notorious for its monotony of sharp curves, steep grades and uninteresting scenery.

The widening project at Waldport has afforded improved drainage, increased parking space for local use and accelerated and safer traffic flow through a previously congested area.

Expenditures for construction activities during the biennium on the Oregon Coast Highway totalled $2,321,850.

Wallowa Lake Highway, Oregon No. 82: Between Elgin and Boswell Ranch, 6.25 miles of grading, surfacing and oiling has been completed to modern standards at a cost of $352,200.

Enterprise-Lewiston Highway, Oregon No. 3: On this route, the South Unit of the Enterprise-Forest Boundary Section, 7.74 miles in length, has been graded, surfaced and oiled; and the North Unit of the Washington State Line-Buford Creek Section, 0.88 mile in length, has been graded to 26-foot roadbed width.

Expenditures on this route during the biennium amounted to $388,048.

Baker-Homestead Highway, Oregon No. 86: A 5.33 mile section of this highway, the west unit between Love Bridge and Black Bridge, has been graded, surfaced and oiled on improved line and grade with one new concrete bridge to modern standards at a cost of $365,100.

Baker-Unity Highway, Oregon No. 7: During 1947 and 1948, a 13.90 mile section of the highway between Salisbury and Mill Gulch has been regraded to improved width; and a 21.02 mile section from Mill Gulch to Unity Junction has been brought to the status of an oiled roadway. These projects have contributed to large extent in providing better service to the users of this highway route.

Expenditures during the biennium on the Baker-Unity Highway amounted to $416,900.

Santiam Highway, U. S. No. 20: At Lebanon, a major improvement has been made for the handling of traffic through the city by the construction of 0.90 mile of new roadbed rock base and 5-inch asphaltic concrete pavement and a new concrete bridge on portions of Park Street, on a new connection therefrom to the existing route near Elmore Street, and by widening the present route on easterly to the east corporate limit. This project carries westbound traffic through the city on Park Street, thus leaving Main Street free for eastbound

traffic and local commercial service. At Foster, a 0.62 mile section of the existing highway has been widened to four-lane width to alleviate the hazards of traffic congestion caused by the rapid commercial developments in this area.

During the biennium, the amount of $242,832 has been expended for construction on the Santiam Highway.

Klamath Falls-Lakeview Highway, Oregon No. 66: The two-year period has witnessed the completion of the Klamath Falls-U. S. R. S. Canal Section, 1.86 miles in length. This project consisted of the widening of the present highway to a minimum 62-foot asphaltic concrete paved surface, with extra widths provided for left-hand turning lanes and side street traffic channelization. This improvement has facilitated the movement of traffic through this highly-developed area to marked degree.

The amount of $528,703 has been expended for construction on this highway during the biennium.

Crater Lake Highway, Oregon No. 62: The Reese Creek-Antelope Creek Section involved the construction of 6.71 miles of grading, surfacing and 22-foot Portland cement concrete paving and three bridges on improved line and grade. By means of this construction, the highway route has been brought to the status of a modern, high-type highway from Medford northerly a distance of 16.5 miles.

Construction expenditures on the Crater Lake Highway during the biennium amounted to $691,116.

Burns-Crane Highway, Oregon No. 78: The Burns-Lawen Section, 18.00 miles in length, has been regraded, surfaced and oiled to improved line, grade and service standards at a cost of $279,500.

Mt. Hood Highway, Oregon No. 50: In the westerly portion of the City of Gresham, an 0.81 mile section of the highway has been widened with 4-inch asphaltic concrete pavement to 46-foot width to alleviate the traffic congestion created by the rapid city development. This project involved an expenditure of $84,000.

Pendleton-John Day Highway, U. S. No. 395: On this route, the Tutuilla Creek Section just southerly of Pendleton has been improved to modern standards, involving 1.05 miles of new grading and 20-foot bituminous macadam surfacing and

the construction of a new 39-foot reinforced concrete bridge. The cost of this improvement was $77,000.

Wilson River Highway, Oregon No. 6: This route has been improved during the two-year period by the constructing of 11.38 miles of asphaltic concrete resurfacing on a previous light oiled surface between McNamars Camp and Washburn School. This resurfacing was necessitated to support the heavy log-hauling traffic to which this section is subjected. Also, a 0.12 mile section of the route in Forest Grove was widened and surfaced with asphaltic concrete to provide one-way routing through the city.

Construction expenditures on the Wilson River Highway during the biennium amounted to $292,807.

Salmon River Highway, Oregon No. 18: The progress made during 1947 and 1948 in improving this highway is marked by the completion of three projects: the Pringle Corner-McMinnville Section, the East Sheridan Section, and the Fort Hill Section near Valley Junction. The first-named project involved 4.05 miles of new grading, surfacing and asphaltic concrete paving and has brought the route from its junction with the West Side Pacific Highway westerly to Sheridan to

Fort Hill bridge over the Yamhill River on the Salmon River Highway in Polk County.

the status of modern highway design. The East Sheridan Section, 0.54 mile in length, consisted of the widening of the city street with asphaltic concrete pavement to provide for local use and through highway use of the street without congestion. At the Fort Hill crossing of the Yamhill River, a new concrete bridge and the construction of 0.74 mile of new oiled-surface approaches thereto on new alignment has replaced a dangerous, narrow bridge and sharp curvature which had previously been the scene of many serious accidents.

Expenditures for construction on the Salmon River Highway during the biennium amounted to $266,681.

Ochoco Highway, U. S. No. 28: At the crossing of the Crooked River, just west of Prineville, a new concrete bridge and 0.90 mile of oil-surfaced highway approaches have been completed on new alignment to replace an inadequate structure and narrow, twisty section of the highway. This work involved an expenditure of $113,100.

Umpqua Highway, Oregon No. 38: At the Reedsport Junction, a 0.19 mile section of new grading and bituminous macadam surfacing has been completed, thereby improving the channelization and safe flow of traffic at this important junction. The expenditure on this improvement was $15,000.

Sunset Highway, Oregon No. 2: The years 1947 and 1948 have witnessed the completion of this important route to the status of an oiled or higher type of travel service throughout. This has been brought about by concentration of construction between Davies and the Multnomah County Line, a distance of 21.73 miles. On this section there have been completed 11.48 miles of grading, 21.73 miles of heavy rock base, 7.48 miles of bituminous macadam surfacing, and 14.25 miles of asphaltic concrete paving. Structures completed during the year include the railroad grade separations near North Plains and Merle, and highway grade separations at Cedar Hills and the Tualatin Valley Highway junction. On the easterly 2.52 miles of the highway, the pavement is of the four-lane divided type, 48-feet in width; elsewhere the pavement is two-lane type 24-feet in width. The completion of construction on this route marks a major improvement in highway service to the public; creating, as it does, a fast modern highway between Portland and the north coastal region, thus materially lessening travel

time and reducing travel hazards formerly attendant to the narrow, twisty routes which were used in the past.

Expenditures for construction on the Sunset Highway during the biennium amounted to $2,328,836.

John Day-Burns Highway, U. S. No. 395: Another step in the planned overall improvement of this highway has been accomplished by the completion of 6.32 miles of grading, surfacing and oiling to improved line, grade and width on the North Unit of the Grant County Line-Crow Flat Section in Harney County. This project was completed at a cost of $292,300.

West Portland-Hubbard Highway: On the northerly portion of this route, which is planned to serve Portland-Salem traffic needs at a future date, there has been completed a 3.78 mile section comprising 0.43 mile of channelized Portland cement pavement at the junction with the Pacific Highway West, and 3.35 miles of asphaltic concrete pavement on the remainder of the project. This improvement serves one of the rapidly developing suburban areas of Portland and is designed and built to fit the pattern of a future four-lane highway.

Expenditures for construction on this highway during the biennium amounted to $159,804.

Secondary State Highways

During the 1947-1948 period, there have been completed on the secondary state highway system 41 highway construction projects and 11 bridges. These projects were located on 32 of the 123 secondary highways and in 22 of the 36 counties in the state.

A brief description of these projects, grouped by geographical divisions of the state, is as follows:

Division No. 1—Comprising the easterly portion of Columbia County, the northerly portion of Yamhill County, and the counties of Washington, Multnomah, and Clackamas. In this Division, there were four highway construction projects and two bridges completed during the two-year period, involving 4.81 miles of grading, 13.87 miles of rock base construction, 13.87 miles of oiled surfacing, and 22.98 miles of asphaltic concrete paving. In Forest Grove on the Nehalem Highway, 0.14 mile of pavement widening was completed to

provide better traffic service through the city. 7.91 miles of surfacing and oiling between Scholls and Newberg on the Hillsboro-Silverton Highway improved the travelway width and serviceability. On the Eagle Creek-Sandy Highway, a 5.96 mile section was brought to the status of an oil-surfaced travelway on new and improved alignment and grade. Between Milwaukie and Estacada on the Clackamas Highway, the 22.84 mile length along narrow county roads was widened and resurfaced with asphaltic concrete pavement to a width of 20 feet; also involving the construction of new concrete bridges over Deep Creek and Rock Creek. This project was undertaken as a federal cooperative timber access project and was necessitated to adequately strengthen the existing roads which were subjected to heavy log hauling for which they were inadequate.

Division No. 2—Comprising the westerly portion of Columbia County, the southerly portion of Yamhill County, and the counties of Clatsop, Tillamook, Lincoln, Benton, Polk, Marion and Linn. In this Division, there were three highway construction projects and five bridges completed during 1947 and 1948, involving 6.42 miles of grading and rock base construction, 7.73 miles of oiled surfacing and 6.42 miles of bituminous macadam surfacing. That portion of the Eddyville-Blodgett Secondary Highway between Nashville and Blodgett, 7.64 miles in length, has been brought to the status of an oiled travelway to provide a more stable surface for heavy log-hauling activities and a corresponding reduction in maintenance costs. Between Gates and Niagara on the North Santiam Highway, the 3.53 mile section has been completed on new alignment and modern standards, replacing the previous narrow road with its several railroad grade crossings. The new roadway provides a 22-foot bituminous macadam surfaced travelway supported on a heavy rock base. On the Albany-Lyons Highway, the Crabtree Creek-Scio Section, 2.89 miles in length, has been graded, surfaced and oiled on new line and grade to bring this heavily travelled section to improved status in the interests of public service. The two-year period has also witnessed the completion of the Mill Creek Bridge near Buell, the Fuller and Ojalla Bridges on the Siletz Highway, the Stillwell Bridge on the Netarts Highway and the

Mill Creek Bridge, east of Salem, on the Silver Creek Falls Highway.

Division No. 3—Comprising the counties of Lane, Douglas, Coos, Curry, Josephine and Jackson. In this Division, there were six highway construction projects and one bridge completed during the two-year period. The work performed involved 7.56 miles of grading, 37.82 miles of rock base and surfacing construction, and 30.15 miles of oiled surfacing. On the Territorial Highway, three projects involving 1.77 miles of grading and 14.92 miles of rock base and oiled surfacing has brought this route to the status of an oiled travelway from Smithfield to Crow, a distance of 12.4 miles, and from Gillespie Corner to Lorane, a distance of 6 miles. A rock surfacing was placed on 17.11 miles of the Richardson-Eugene Highway between Globe and Elmira to provide stability to the roadway for all year service. On the Tiller-Trail Highway, 5.79 miles of grading, surfacing and oiling and the construction of a new bridge over Coffey Creek has extended the improvement of this highway from Milo to Tiller. A 9.44 mile section of the Rogue River Loop Highway has been brought to the status of an oiled travelway between the Robertson Bridge over the Rogue River and the southerly terminus of the highway near Wilderville on the Redwood Highway.

Division No. 4—Lying easterly of the summit of the Cascade Mountains and comprising the central portion of Oregon between the Columbia River and California. Seven highway construction projects and two bridges were completed in this Division during 1947 and 1948, involving 25.00 miles of grading, 60.69 miles of rock base construction, and 60.69 miles of oiled surfacing. The Sherars Bridge Highway from its westerly terminus near Tygh Valley easterly for 12.17 miles has been resurfaced and oiled on improved line and grade, and a new bridge constructed over Buck Hollow Creek at the Wasco-Sherman County Line. The Fulton Canyon-Wasco Highway, 1.28 miles in length, has been graded, surfaced and oiled to improved width and alignment. The entire Madras-Prineville Highway, 26.32 miles in length, has been surfaced and oiled to 20-foot travelway width, and an undercrossing structure completed to separate railroad-highway traffic at the crossing with the Prineville railway. This improvement provides safe

and modern transportation facilities between Prineville and Madras at a saving in travel distance of 10.7 miles over the previously traveled route through Redmond. The Cline Falls-Tumalo and Tumalo-Deschutes Secondary Highways have had 9.88 miles of regrading work performed thereon to improved width, grade and alignment and have been resurfaced and provided with a 20-foot oiled travelway over their entire lengths, totalling 13.91 miles. The Lower Klamath Highway, 7.01 miles in length, has been regraded, surfaced and provided with a 20-foot oiled travelway throughout its length, materially improving the serviceability of the former unsurfaced route.

Division No. 5—Comprising the most easterly portion of Oregon. In this Division, there were 21 highway construction projects and one bridge completed during the two-year period. The highway construction projects involved 117.56 miles of grading, 128.51 miles of rock base and surfacing construction, and 117.51 miles of oiled surfacing. This work was performed on 15 secondary highways as follows: Wasco-Heppner (2 projects), Lexington-Echo (2 projects), Heppner-Spray (2 projects), Starkey, Cove, Little Sheep Creek, Kimberly-Long Creek (3 projects), Halfway-Cornucopia, Diamond Valley (2 projects), Princeton-Rome, Nyssa-Adrian, Vale-West, Adrian-Parma, Adrian-Arena Valley, and Adrian-Caldwell.

On all but the 5.54 mile Halfway-Carson Section on the Halfway-Cornucopia Highway, the work involved grading to improved width, line and grade. On all but two projects, the 5.22 mile East Cottonwood Canyon Section of the Wasco-Heppner Highway and the 2.63 mile Meadow Brook-Red Bridge Section of the Starkey Highway, the work involved the construction of a new rock base and oiled surface travelway. The new bridge structure was a reinforced concrete undercrossing to carry the new highway under the tracks of the Union Pacific Company railroad on the 10.13 mile Adrian-Homedale grading, surfacing and oiling project on the Nyssa-Adrian Secondary Highway.

Expenditures made for construction work on the secondary state highway system during the biennium amounted to $5,984,162.

County Roads

During 1947 and 1948, there have been completed seven highway construction projects and five bridges under state supervision on county roads lying outside of the primary and secondary state highway systems. With one exception, a bridge over Little River at Glide in Douglas County, these projects were constructed under cooperative agreements with the Federal Public Roads Administration. These projects were located in eight counties, and involved 19.36 miles of grading, 51.12 miles of rock base construction, 34.78 miles of oiled surfacing, 3.69 miles of bituminous macadam surfacing, and 13.33 miles of asphaltic concrete paving.

A brief summary of the improvements made under these county road projects is as follows:

The construction of a 60-foot concrete bridge and 0.25 mile of graded, surfaced and oiled approaches thereto has been completed at the crossing of the North Powder River on the North Powder River Road in Baker and Union Counties.

In Columbia County, 5.74 miles of surfacing and oiling work was performed on the Spitzenberg-Scappoose Road.

In Douglas County, 7.16 miles of grading and heavy rock base construction; and 7.84 miles of 4-inch asphaltic concrete paving was completed on the Dixonville-Marks Ranch Section of the North Umpqua Road. Also, a new bridge was constructed at the crossing of Little River near Glide. The North Umpqua Road is subjected to extraordinary use as an outlet for timber, and its improvement from Roseburg easterly has been accelerated as limited funds will permit to provide the roadway stability and width required for such use.

In Klamath County, 3.00 miles of grading, 2 bridges, and 15.02 miles of rock base and oiled surface construction has been performed on the Bonanza-Poe Valley-Malin Road, bringing this route to improved status and service adequacy.

In Marion County, the Middle Grove-Pudding River Section of the Silverton Road has been completed and placed in service. This project involved the widening of the Little Pudding River Bridge, 1.65 miles of new grading, surfacing, and 4-inch, 20-foot asphaltic concrete paving; and the widening and repaving with asphaltic concrete of 3.84 miles of existing 16-foot pavement to a travelway width of 20 feet. The improvement has

High-type pavement placed on North Umpqua County Road east of Roseburg.

materially reduced travel time between Salem and Silverton by the elimination of several sharp curves, and by providing greater travelway width and improved riding surface.

In Multnomah County, the 3.69 mile West Union-Cornelius Pass Unit of the Hillsboro-Cornelius Pass Road, including the construction of a new bridge over Rock Creek, has been graded, surfaced and oiled to improved line, grade and width.

In Union County, the 6.96 mile Dry Creek-West Ranch Unit of the Island City-Summerville Road has been improved by strengthening the rock base and providing an 18-foot oiled surface travelway.

In Wheeler County, the Butte Creek-Kinzua Section of the Kinzua Road has been improved by 3.86 miles of regrading and the construction of 7.06 miles of rock base and 20-foot oiled surface travelway.

These projects have contributed to the progress being made by the several counties in modernizing the county road systems.

Expenditures made during the biennium for construction of the various projects on county roads not on either of the two state highway systems amounted to $882,118.

City Projects

The year 1948 is the first year in which the State Highway Department has functioned in the making of surveys, preparing plans and performing with highway funds the improvement of city streets not on either of the two state highway systems. Particulars regarding this new city street improvement function are given in another part of this report.

Reporting on the progress made in undertaking and performing this new function, the nine city projects which have been completed during 1948 are as follows: In Beaverton, 0.04 mile of asphaltic concrete paving on East Street and 0.60 mile of oiled surfacing on Lombard Street; in Brownsville, 0.11 mile of rock base construction and asphaltic concrete paving on Main Street; at Central Point, 0.53 mile of bituminous macadam resurfacing on Pine Street; in Florence, 0.24 mile of rock base and bituminous macadam surfacing on Lincoln and Hamlin Streets; at Myrtle Point, 0.28 mile of asphaltic concrete paving on Maple Street; in Newport, 0.30 mile of rock base and bituminous macadam surfacing on Canyon Road; at Powers, 0.44 mile of rock base and oiled surfacing on Poplar Street and Fourth Avenue; in Riddle, 0.27 mile of rock base and bituminous macadam surfacing on Main and Fourth Streets; and in Sweet Home, 0.67 mile of rock base and asphaltic concrete paving on 18th and "H" Streets. In connection with these projects, the drainage of the streets has been provided for and, in many cases, concrete curbs have also been constructed.

In addition to the above projects, similar city street projects have also been contracted in West Salem, Dallas, Independence and Oakridge. The projects in Dallas and Independence, though completed, are combined with the West Salem project under one contract which is not completed at this time. The description of these uncompleted contract projects will be covered in the ensuing biennial report.

CLASSES OF HIGHWAYS

The classes of highways with which the Highway Commission is normally concerned, and in connection with which it normally expends the state and federal funds which are entrusted to it, are as follows:

1. Primary State Highways.
2. Secondary State Highways.
3. Primary Federal Aid Highways.
4. Secondary Federal Aid Highways.
5. Urban Federal Aid Highways.
6. Public Lands Highways.
7. Federal Forest Highways.
8. County Roads.

Classification of highways as above indicated is made necessary by the several plans of highway financing that have been developed during the years by the State and Federal Government. Each plan of financing limits itself to particular highways or kinds of highways and thus establishes a new classification. It is possible for a highway to be in two or more classes. For instance, a primary state highway may also be a primary federal aid highway. Likewise, a road may be both a county road and a secondary federal aid highway.

Brief descriptions of these several different classes of highways are given in the paragraphs which follow:

Primary and Secondary State Highways. State Highways are those highways for which the State has assumed the responsibilities of maintenance and improvement. In the beginning, all state highways were of the same class, but when the point was reached where the system included a complete network of the main arterial highways, it became desirable to have a separate system for highways which serve as feeders to the main network rather than as main lines. The main arterial system was, therefore, designated the Primary State Highway System, and a second system, called the Secondary State Highway System, was set up to receive such additional highways as might not be considered of sufficient importance to justify inclusion in the Primary System.

Additions to the Primary System may be made by the state legislature or by the State Highway Commission. Additions

to the Secondary System may be made by joint action of the State Highway Commission and the County Court of the county in which the highway is situated. The conditions under which state moneys may be expended on primary and secondary highways are the same for both classes. Counties bear no financial responsibility for the maintenance or improvement of either class.

The present mileage of Primary State Highways is 4,820. The present mileage of Secondary State Highways is 2,478. Complete listings of the highways included in the primary and secondary systems are given in Tables 28 to 31 in Section Three of this report. A small scale map showing the highways which comprise the two systems is also included in Section Three.

Listings of expenditures made on the primary and secondary state highways appear in Tables 11 to 16, inclusive, in Section Three.

Primary Federal Aid Highways. The Primary Federal Aid System of highways comprises those highways which have been designated under authority of the Federal Highway Act of 1921 as highways eligible to have primary federal aid funds

Pavement widening, channelization and lighting completed on South Sixth Street in Klamath Falls.

expended upon them. The highways in this system are selected and designated by mutual agreement between the Highway Commission and the Federal Public Roads Administration. The total mileage of highways of this class is limited to 8 per cent of the total mileage of public roads in existence in 1921, which places the limit for the State of Oregon at 3,346.1 miles, exclusive of miles within national forests and other federal reservations and exclusive of miles within cities. The total mileage in the system at present is 3,278 miles, plus 522 miles which are within national forests and reservations and 134 miles within cities having populations of 2,500 or more.

Primary federal aid funds allotted to the State of Oregon for use on primary federal aid highways for the fiscal years 1939 to 1950 were as follows:

Fiscal year 1939	$2,048,413
Fiscal year 1940	1,638,823
Fiscal year 1941	1,884,937
Fiscal year 1942	1,647,906
Fiscal year 1943	1,649,132
Fiscal year 1944	None
Fiscal year 1945	None
Fiscal year 1946	3,728,908
Fiscal year 1947	3,728,403
Fiscal year 1948	3,683,994
Fiscal year 1949	None
Fiscal year 1950	3,330,486

A complete listing of the Primary Federal Aid Highways in Oregon is given in Table IV in Section Two of this report.

Secondary Federal Aid Highways. The federal aid road act adopted by Congress during the session of 1944 amended the federal act of 1936 which created a federal aid secondary highway and feeder road system.

The federal act of 1936 provided for a feeder road and secondary system which would equal 10 per cent of the rural road mileage of the state. The mileage available to the state under the terms of this act was 4,933, and there was recommended to the Public Roads Administration a system of 1,148 miles, which was approved.

Under the terms of the act of 1944, the 1936 law was amended, and no limitation was placed upon the mileage which could be included in the system, except that the mileage in the initially selected system should be no greater than could be

improved within a reasonable period of time. The federal act of 1936 provided that the roads to be included in the system should be by cooperative agreement between the State Highway Commission and the Commissioner of Public Roads. The act of 1944 provides that the roads to be included in the system shall be as agreed upon by the local authorities, which in the State of Oregon are the county courts, the State Highway Commission, and the Commissioner of Public Roads.

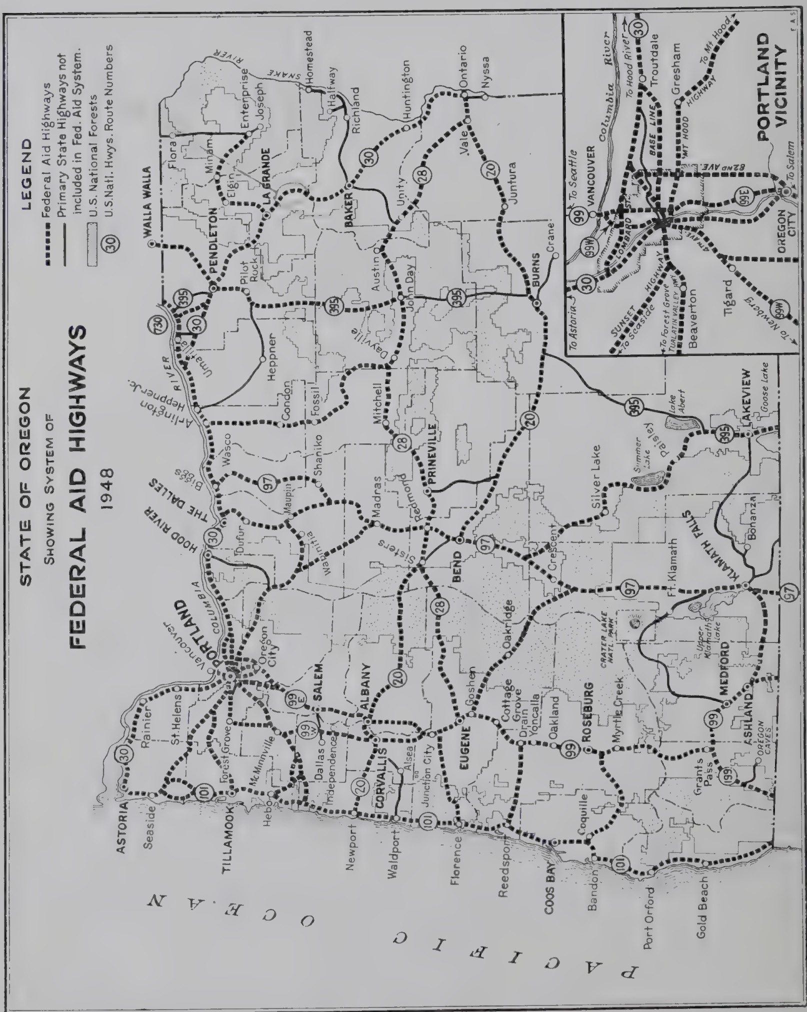


TABLE IV

Primary Federal Aid Highway System

Federal Route No.	Highway	Total Federal Aid Mileage Inclusive of Miles Within Cities and Reservations	Mileage Within Cities of 2,500 or More	Mileage Within National Forests	Mileage Within Indian Reservations	Total Federal Aid Mileage Exclusive of Miles Within Cities and Reservations
1	Astoria to Ontario	511.33	31.89	29.55	*24.44	425.45
2	Oregon Coast Highway	394.02	10.24	46.38	† 0.29	337.11
3	Pacific Highway	337.85	23.12	7.53	.....	307.20
4	The Dalles-California Highway	279.47	4.73	19.46	50.10	205.18
5	Eugene to Ontario	385.00	.....	86.01	.....	298.99
6	Arlington to Rock Creek	123.63	.....	.....	.....	123.63
7	La Grande to Enterprise	66.25	0.46	.....	.....	65.79
8	Heppner Junction to Pendleton‡	.....	.....	.....	.....	.....
9	Pacific Highway West	116.04	13.34	.....	.....	102.70
10	Albany-Corvallis Highway	10.50	0.65	.....	.....	9.85
11	McMinnville-Tillamook Highway	48.68	.....	13.44	.....	35.24
12	Sherman Highway	69.00	.....	.....	.....	69.00
13	Ft. Klamath to Crater Lake‡	.....	.....	.....	.....	.....
14	Coos Bay-Roseburg Highway	61.81	0.29	.....	.....	61.52
15	Green Springs Highway	56.34	0.98	1.57	.....	53.79
16	Fremont Highway	158.23	.....	14.25	.....	143.98
17	Redwood Highway	42.34	.....	0.93	.....	41.41
18	Boardman to Wallula	39.49	.....	.....	.....	39.49
19	Pendleton to Washington State Line	36.60	.....	.....	.....	36.60
20	Umpqua Highway	50.13	.....	0.57	.....	49.56
21	Bend to Burns	131.71	2.59	.....	.....	129.12
22	Corvallis-Newport Highway	56.91	0.99	.....	.....	55.92
23	Salmon River Highway	21.92	.....	.....	.....	21.92
24	Portland to Maupin	99.21	6.69	37.04	.....	55.48
25	Siuslaw Highway	67.32	.....	17.60	.....	49.72
26	East Portland-Oregon City	19.51	9.36	.....	.....	10.15
27	Sunset Highway	65.52	2.31	.....	.....	63.21
28	Cannon Beach Road	20.96	.....	.....	.....	20.96
29	Willamette Highway	87.17	.....	64.12	.....	23.05
30	Pendleton to John Day	122.15	1.73	16.67	.....	103.75
31	Burns to Vale	114.97	1.01	.....	.....	113.96
32	Tualatin Valley Highway	42.36	1.82	.....	.....	40.54
33	Klamath Falls-Weed Highway	14.30	.....	.....	.....	14.30
34	Boyer to Dolph	5.60	.....	4.90	.....	0.70
35	Tillamook to Banks	54.32	0.48	.....	.....	53.84
36	Pendleton to Cold Springs	18.50	.....	.....	.....	18.50
37	Santiam Highway	101.30	0.48	53.53	.....	47.29
38	Fourth Street entrance to Portland§	.....	.....	.....	.....	.....
39	Base Line Road	13.00	4.58	.....	.....	8.42
40	Lombard Street	10.90	7.90	.....	.....	3.00
41	82nd Avenue	13.80	6.20	.....	.....	7.60
42	West Portland-Hubbard Highway	17.50	.....	.....	.....	17.50
43	Front Avenue, Portland	2.60	2.60	.....	.....	.....
44	Warm Springs Highway	46.40	.....	7.00	27.00	12.40
	Totals	3,934.64	134.44	420.55	101.83	3,277.82

* Includes 2.20 miles in Celilo Canal Reserve.

† Cape Perpetua Lighthouse Reserve.

‡ Withdrawn from Federal Aid System.

§ Included in Route No. 9.

Soon after the act of 1944 was approved, the Highway Department undertook a study to determine the highways and county roads that could be considered for inclusion in the secondary and feeder road system.

Of first importance in the selection of the system was to determine the number of miles that could be constructed within a reasonable period of time. Based upon the probable revenues that might be available, it was determined that approximately 5,000 miles should be in the initial system.

It was at once evident that it would be advantageous to include in the federal secondary and feeder road system all of the mileage of state primary highways and all of the mileage of state secondary highways which were not a part of the primary federal aid system, because if not included they would not be eligible for federal funds and their construction and reconstruction could not be carried forward with a reasonable expectation of being completed.

The mileages of state primary highways and state secondary highways that are not included in the primary federal aid system are not evenly distributed throughout the counties, and to attempt to allocate a system of federal secondary and feeder roads in each county on the basis that the federal secondary and feeder road funds are apportioned to the state, one-third rural population, one-third post road mileage, and one-third area, was not equitable. It was, therefore, determined that there should be approximately 1,700 miles of county roads, and the allocation of the mileage to each county should be based on the formula which is used in determining the apportionment of federal secondary and feeder road funds.

The county officials were then called into consultation, and their recommendations were requested as to what county roads in each county should be recommended for inclusion. The county officials agreed that the primary state highway mileage and the secondary state highway mileage not a part of the federal aid primary system should be included, and also agreed that 1,700 miles of county roads were equitable and fair. As a result of this method of allocation, there are county roads in each county included in the system.

Following these conferences with the county officials, the State Highway Commission recommended to the Public Roads

Administration a system of 5,080.88 miles, of which 926.01 were state primary highways, 2,394.57 state secondary highways, and 1,760.30 county roads.

The Public Roads Administration reviewed this recommendation, and as of January 29, 1945, gave official approval to 885.57 miles of primary state highways, 2,154.15 miles of secondary state highways, and 1,370.45 miles of county roads, or a total of 4,410.17 miles. The highways and roads not approved by the Public Roads Administration were not definitely eliminated from the proposed system, but were merely deferred for future consideration. The approved mileage created a well-balanced system of secondary and feeder roads, the construction of which can be carried forward with funds that can reasonably be expected within the next 15 years, and the roads deferred for future consideration by the Public Roads Administration will be given study and as the need for their improvement becomes evident and analyses of the relative benefits are completed additional mileages may be added from time to time.

Subsequent to January 29, 1945, a number of changes in the approved system were made by mutual agreement of the Highway Commission, the County Courts and the Commis-

Milo-Tiller Project on Tiller-Trail Highway in Douglas County.

sioner of Public Roads, with the result that the total mileage of highways in the approved system is now 4,416. This total mileage consists of 884 miles of primary state highways, 2,167 miles of secondary state highways and 1,365 miles of county roads. 897 (1950) 1288

A list of the federal secondary and feeder roads which have been approved for inclusion in this system is given in Table V in Section Two of this report. 11-14-50

Federal aid funds allotted to the State of Oregon for use on secondary federal aid highways for the fiscal years 1939 to 1950 were as follows:

Fiscal year 1939	$ 409,683
Fiscal year 1940	245,823
Fiscal year 1941	245,861
Fiscal year 1942	288,383
Fiscal year 1943	288,598
Fiscal year 1944	None
Fiscal year 1945	None
Fiscal year 1946	2,544,582
Fiscal year 1947	2,544,245
Fiscal year 1948	2,513,880
Fiscal year 1949	None
Fiscal year 1950	2,272,391

Salt Creek-Dolph Corner project on Dallas-Coast Secondary Highway in Polk County.

TABLE V

Secondary Federal Aid Highway System

The mileages given in this table are inclusive of mileages within cities, towns and urban areas.

F. A. S. No.	Name	Termini	Length in Miles
1	Nehalem	Astoria-FA 27 near Buxton	76.15
2	Warrenton-Ft. Stevens	FA 2 in Warrenton-Ft. Stevens	4.53
3	Fishhawk Falls	FA 27 near Elsie-FAS 1 west of Jewell	5.86
4	Mist-Clatskanie	FAS 1 at Mist-FA 1 at Clatskanie	11.90
5	Warrenton-Chapman Street	FA 2 in Warrenton-FAS 2 in Warrenton	1.62
6	Elsie-Jewell	FA 27 near Elsie-FAS 1 at Jewell	8.70
8	Youngs Bay-Melville	FA 2 near Astoria-Melville	7.20
9	Pittsburg-Scappoose	FAS 1 at Pittsburg-FA 1 at Scappoose	21.00
10	Ingils-Mayger	FA 1 near Quincy-Mayger	4.40
12	Treharne-Sunset Camp	FA 27 at Sunset Camp-FAS 1 at Treharne	10.50
14	Little Nestucca	FA 2 near Cloverdale-FA 11 at Dolph	9.40
15	Miami-Barnsdale School	FA 2 at Garibaldi-Barnsdale	7.60
16	Netarts	FA 2 at Tillamook-Oceanside	9.15
18	Hemlock-Sand Lake	FA 2 at Hemlock-Sand Lake	5.90
19	Peltz Corner-Trask River	FA 2 near Tillamook-FAS 20	2.00
20	Fairview-Clements Corner	FA 2 south of Tillamook-FA 35 east of Tillamook	5.50
21	Coast Highway-Pacific City-Woods	FA 2 south of Cloverdale-Woods	3.70
22	Beaverton-Aurora	FAS 43 east of Burlington-FAS 43 south	
23	Nehalem	FA 27 near Buxton-FA 32 at Forest Grove	9.24
24	Forest Grove-Balm Grove	FA 32 at Forest Grove-FA 35 near Gales Creek	9.30
25	Beaverton-Hillsdale	FA 32 at Beaverton-FA 9 in Portland	6.72
26	Farmington	FAS 50 south of Hillsboro-FAS 22 in Beaverton	9.89
27	Scholls	FAS 50 at Scholls-FAS 25 near Beaverton	12.40
29	Hillsboro-North Plains-Shadybrook	FA 32 in Hillsboro-Shadybrook	8.80
31	Cornelius-Blooming	FA 32 at Cornelius-1 mile south of Blooming	3.70
32	Hillsboro-Cornelius Pass	FA 32 in Hillsboro-FA 1 near Burlington	13.59
33	Hillsboro-Farmington-North Scholls	FAS 27 near N. Scholls-FA 32 near Hillsboro	8.20
34	Six Corners-Sherwood-Tualatin	FA 9 at Six Corners-FAS 22 at Tualatin	5.00
35	Cedar Mill	FA 27 near Crenco-FA 1 in Portland	8.80
37	Sun Dial	FA 1 east of Fairview-Aluminum Plant	1.25
38	N. E. Glisan Street	FA 41 in Portland-Base Line Road south of Troutdale	9.70
39	S. E. Foster Road	FA 41 in Portland-FAS 129 at Damascus	9.00
43	Sauvies Island (West Side)	FA 1 south of Burlington-FAS 44 east of Burlington	2.50
44	Sauvies Island (Central)	FAS 43 east of Burlington-FAS 43 south of Burlington	10.40
45	Sauvies Island (Oak Island)	FAS 44 east of Burlington-north end Little Sturgeon Lake	3.00
50	Hillsboro-Newberg	FA 32 in Hillsboro-FA 9 in Newberg	21.04
100	Three Mile Lane	FA 9 in McMinnville-FA 9 at Dayton Junction	8.46
101	Yamhill-Newberg	FA 9 in Newberg-FA 32 in Yamhill	11.65
102	Newberg-Silverton	FA 9 in Newberg-FAS 147 in Silverton	31.15

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
103	Bellevue-Hopewell	FA 11 at Bellevue-FAS 116 east of Hopewell	14.89
104	Lafayette	FAS 103 north of Hopewell-FAS 104 and 105 west of Dayton	6.25
105	Amity-Dayton	FAS 9 north of Amity-FAS 100 west of Dayton	7.03
103	Springbrook-Chehalem Mt.	FA 9 east of Newberg-FAS 50 northwest of Springbrook	3.00
109	Carlton-Chehalem Creek	FA 32 in Carlton-FAS 101 northwest of Newberg	5.80
110	Pike-Yamhill	FA 32 in Yamhill-Pike	4.90
111	Carlton-McMinnville	FAS 112 near McMinnville-FA 32 in Carlton	6.30
112	Baker Creek-McMinnville	FA 9 in McMinnville-Baker Creek	6.30
113	Gopher Valley	FA 11 east of Sheridan-Gopher Valley	4.50
114	Willamina-Coast Creek	FA 11 in Willamina-Coast Creek	6.30
115	Mt. Hood	FA 24 near Government Camp-FA 1 at Hood River	44.80
116	Salem-Dayton	FAS 123 at West Salem-FAS 100 in Dayton	20.10
117	Canby-Marquam	FA 3 at Canby-FAS 140 west of Molalla	8.02
118	Liberal-Molalla-Wilhoit	FAS 147 at Liberal-Wilhoit	9.00
119	Milwaukie-Gladstone	FA 41 in Gladstone-Milwaukie	5.90
120	West Linn-Oswego-Wilsonville Road	FA 3 in West Linn-FAS 122 southwest of Oswego	5.10
121	North Santiam	FAS 127 west of Shaw-FA 37 at Santiam Junction	77.38
122	Oswego-Wilsonville-Newberg	FA 3 at Oswego-FA 9 east of Newberg	23.90
123	Salem-Dallas	FAS 190 in Dallas-FA 3 in Salem	14.92
124	Mehama-Mill City	FAS 121 at Mehama-FAS 121 at Mill City	8.83
125	Jefferson	FA 3 north of Jefferson-FA 3 south of Jefferson	8.60
126	Greensbridge-Scio	FAS 125 at Jefferson-FAS 220 at Scio	9.20
127	Silver Creek Falls	FA 3 in Salem-FAS 147 in Silverton	40.82
128	Yergen Corner-Aurora	FAS 102 south of Newberg-FAS 22 at Aurora	11.90
129	Clackamas-Boring	FA 41 at Clackamas-FA 24 near Sandy	12.80
130	Silverton-Sublimity	FAS 121 at Sublimity-FAS 147 at Silverton	13.20
131	Parkplace-Springwater	FA 41 at Parkplace-FAS 140 near Estacada	17.20
132	Rock Creek-Eagle Creek	FAS 129 near Rock Creek-FAS 141 at Eagle Creek	9.80
137	Dallas-Coast	FA 11 near Valley Junction-FAS 123 in Dallas	15.19
138	Monmouth-Independence	FA 9 in Monmouth-FAS 142 in Independence	2.37
139	Monmouth	FAS 190 near Dallas-FA 9 at Monmouth	7.20
140	Woodburn-Sandy	FA 3 near Woodburn-FA 24 near Sandy	48.49
141	Eagle Creek-Sandy	FAS 140 near Eagle Creek-FA 24 at Sandy	7.06
142	Independence	FAS 138 in Independence-FAS 123 near Eola	6.38
144	Alsea	FA 2 at Waldport-FA 22 near Philomath	59.11
145	Eddyville-Blodgett	FA 22 near Blodgett-Nashville	7.27
146	Otis-Rose Lodge	FA 2 at Otis-FA 23 at Rose Lodge	4.10
147	Salem-Oregon City	FA 3 near Salem-FA 26 at Oregon City	41.65
149	Schooner Creek	FA 2 at Taft-Schooner Creek	2 50
150	Siletz-Orton	FAS 196 at Siletz-Orton	8.00
151	Burnt Woods-Harlan	FA 22 at Burnt Woods-Harlan	8.50
152	Yachats River	FA 2 at Yachats-Yachats River	6.50
159	Salem-Brassel Corner	FA 123 in Salem-FAS 102 near Woodburn	16.60

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
176	Salem-Independence	FA 3 in Salem-FAS 142 in Independence	11.00
190	Kings Valley	FA 22 near Wren-FAS 123 in Dallas	28.05
193	Granger	FA 10 near Albany-FAS 138 in Independence	18.60
196	Siletz	FA 22 near Toledo-FA 2 at Kernville	31.86
200	Monroe-Cheshire	FA 9 in Monroe-FA 25 at Cheshire	8.66
201	Cheshire-Hadleyville	FA 25 near Cheshire-Hadleyville	15.58
202	Corvallis-Eastside	FA 9 in Corvallis-FA 3 at Albany	10.19
205	Granger-Wells	FA 10 at Granger-FAS 193 near Wells	5.60
206	Greenberry-Beaver Creek	FA 9 near Greenberry-Beaver Creek	5.50
207	Bellfountain-Dawson	FA 9 near Monroe-Dawson	6.40
208	Albany Airport	FA 37 near Albany-FA 3 at Albany Airport	1.07
210	Eugene-Harrisburg	FA 3 in Eugene-FA 3 in Harrisburg	20.10
212	Crabtree Corner-Lebanon	FA 37 in Lebanon-FAS 220 near Crabtree	8.20
213	Brewster-Lacomb	FAS 212 near Lebanon-Lacomb	6.70
214	Lebanon-Berlin	FAS 212 near Lebanon-Berlin	9.00
215	Halsey-Sweet Home	FA 3 in Halsey-FA 37 in Sweet Home	21.51
216	Orleans-Lebanon	FAS 202 at Orleans-FA 37 in Lebanon	15.00
217	Foster-Sweet Home	FA 37 at Sweet Home-FA 37 at Foster	4.00
218	Holley-Rice School	FAS 215 near Holley-Rice School	4.50
219	Junction City-Eugene	FA 3 in Eugene-FA 3 in Junction City	13.52
220	Albany-Lyons	FA 37 near Albany-FAS 124 at Lyons	24.68
221	Creswell-Pleasant Hill	FA 3 at Creswell-FA 29 near Pleasant Hill	7.22
222	Springfield-Pleasant Hill	FA 5 near Springfield-FA 29 near Pleasant Hill	8.30
223	Fox Hollow	FA 3 near Walker-FA 3 in Eugene	15.50
225	Alsea-Deadwood	FA 25 near Swisshome-Paris	19.45
226	Canary	FA 2 near Florence-Canary	5.60
227	Junction City-Lewis Ranch	FA 3 in Junction City-Lewis Ranch	6.20
228	Eugene-Marcola	FAS 210 near Eugene-Marcola	15.80
229	Eugene-Gillespie Corner	FA 3 in Eugene-Gillespie Corner	16.50
230	Jasper-Lowell	FA 29 at Lowell-FAS 222 at Jasper	11.60
231	Cottage Grove-Culp Creek	FA 3 in Cottage Grove-Culp Creek	19.20
232	Elkton-Sutherlin	FA 20 at Elkton-FA 3 in Sutherlin	27.57
233	Sutherlin	FAS 232 near Sutherlin-FA 3 near Sutherlin	1.69
234	Canyonville-Tiller	FA 3 at Canyonville-Tiller	23.51
238	Eugene-Walton	FA 3 in Eugene-Walton	27.13
239	Yoncalla-Scotts Valley	FA 3 near Yoncalla-Scotts Valley	7.10
240	Sutherlin-Nonpareil	FA 3 in Sutherlin-Nonpareil	8.60
241	Roseburg-Cleveland	FA 3 in Roseburg-Cleveland	12.80
243	Azalea-Anchor	FA 3 at Azalea-Anchor	6.30
244	Riddle	FA 3 near Myrtle Creek-Riddle	3.00
245	Glendale	FA 3 north of Glendale-Glendale	11.25
246	Empire-Coos Bay	FAS 263 near Empire-FA 2 in Coos Bay	3.55
247	Powers	FA 14 near Myrtle Point-Powers	18.62
248	Lakeside	FA 2 near Lakeside-Lakeside	1.10
249	Jordan Point	FA 2 near Jordan Point-Jordan Point	2.80
250	Coquille-Fairview	State Highway No. 9 in Coquille-Fairview	8.00
251	Coquille-Myrtle Point	FA 14 near Coquille-FA 14 at Myrtle Point	13.10
252	Myrtle Point-Gravelford	FA 14 at Myrtle Point-Gravelford	8.00
253	North Umpqua	FA 3 in Roseburg-Rock Creek	23.20
255	Enegren Ferry-Delwood	FAS 262 at Enegren Ferry-Delwood	8.00
256	Port Orford	FA 2 at Port Orford-U. S. Coast Guard Station	0.79
257	Sixes-Dry Creek	FA 2 at Sixes-county road at Dry Creek	6.10
258	Gold Beach-Bagnall Ferry	FA 2 at Gold Beach-Bagnall Ferry	4.90
259	North Side Chetco River	FA 2 at Brookings-county road near Mill Creek	5.80

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
260	Oregon Caves	FA 17 at Cave Junction-Oregon Caves National Monument	19.70
261	Rogue River Loop	FA 17 near Wilderville-FA 3 in Grants Pass	23.00
262	Coos River	FA 2 near Coos Bay-county road near Allegany	18.86
263	Cape Arago	FA 2 in North Bend-Cape Arago State Park	14.25
264	Grants Pass-West	FAS 261 near Grants Pass-FAS 261 near Grants Pass	4.50
265	Merlin-Hugo	FA 3 near Grants Pass-FA 3 near Hugo	9.80
266	Wilderville-Grants Pass	FA 17 at Wilderville-FAS 280 near Grants Pass	10.50
267	Holland Loop	FAS 260 near Cave Junction-FAS 260 north of Holland	6.20
268	Medford-Provolt	FA 3 in Medford-FAS 280 at Provolt	25.42
269	Crater Lake	FA 3 near Medford-Crater Lake National Park	66.60
271	Sams Valley	FA 3 in Gold Hill-FAS 269 near Trail	15.95
273	Medford-Sams Valley	FA 3 near Medford-FAS 271 in Sams Valley	12.10
274	Jacksonville-Central Point	FAS 268 in Jacksonville-FAS 269 east of Central Point	9.30
276	Rogue River-Wimer	FA 3 at Rogue River-county road at Wimer	7.80
277	Dead Indian	FA 15 near Ashland-county road near Frog Creek	6.50
278	Phoenix-Voorhies	FA 3 in Phoenix-FA 3 near Medford	3.10
280	Williams	FA 3 near Grants Pass-county road near Williams	23.13
287	Butte Falls	FAS 269 south of Trail-Butte Falls	15.40
288	Little Butte	FAS 269 in Eagle Point-Lake Creek	11.43
300	Odell	FAS 115 near Odell-FAS 356 near Van Horn	3.51
301	Schenck Corner-Van Horn	FAS 300 near Odell-FAS 115 near Van Horn	2.00
302	Cider Mill-Rockford	FA 1 near Hood River-county road near Oak Grove	4.25
303	Windmaster Corner-Oak Grove	FAS 302 in Oak Grove-FAS 356 near Hood River	2.00
305	Odell School-Fikes Crossing	FAS 356 near Summit-FAS 300 near Odell	2.25
306	Dee-Lost Lake Road	FAS 356 at Dee-county road southwest of Dee	2.70
307	Sherars Bridge	FA 4 near Tygh Valley-FA 12 at Grass Valley	28.97
308	Shaniko-Fossil	FA 12 at Shaniko-FA 6 in Fossil	43.65
309	The Dalles-Mill Creek	FAS 365 in The Dalles-county road near Mill Creek	8.00
310	Dufur-Atkinson Ranch	FA 4 at Dufur-FA 4 near Boyd	5.00
311	Tygh Valley-Pinehurst School	FA 4 at Tygh Valley-county road near Pinehurst School	7.90
312	Bakeoven Road	FA 4 at Maupin-county road east of Maupin	5.00
313	Rufus-Scott Canyon	FA 1 at Rufus-Scott Canyon county road	3.20
314	Willowdale-Ashwood	FA 4 near Willowdale-county road in Ashwood	12.00
316	Service Creek-Mitchell	FA 6 at Service Creek-FA 5 at Mitchell	24.85
317	Hardman	FAS 378 near Heppner-county road near Chapen Creek	14.92
318	Spray-Waterman	FA 6 at Spray-county road at Waterman	13.00
319	McKenzie-Bend	FA 4 near Bend-FA 5 near Sisters	20.07

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
320	O'Neil	FA 4 at Prineville Junction-FA 5 at Prineville	17.81
321	Crooked River	FA 5 in Prineville-State Secondary Highway No. 380 southeast of Prineville	21.44
322	Terrebonne-O'Neil	FA 4 at Terrebonne-FAS 400 near Prineville	5.10
324	Cline Falls	FAS 319 at Tumalo-FA 5 near Cline Falls	10.13
325	Tumalo-Deschutes	FAS 324 at Tumalo-county road at Deschutes	3.90
326	Redmond-Bend	FAS 319 near Bend-FA 4 at Redmond	13.53
327	Cloverdale-South	FA 5 at Cloverdale-FAS 319 near Sisters	4.50
329	Gerkhing Corner-North	FAS 319 near Tumalo-north to county road	2.30
330	Carroll Acres-Southeast	FA 4 near Bend-southeast to county road	2.20
356	Hood River	FAS 115 near Parkdale-FA 1 in Hood River	18.14
365	Chenoweth Creek	FA 1 in The Dalles-county road near Chenoweth Creek	3.00
369	Petersburg-Fairbanks	FA 4 near Petersburg-county road at Fairbanks	7.00
378	Wasco-Heppner	FA 1 near Sherman-FAS 439 at Heppner	101.98
385	Madras-Prineville	FA 5 in Prineville-FA 4 near Madras	26.81
390	Fossil-Kinzua	FA 6 near Fossil-county road near Kinzua	7.00
395	Terrebonne-Lower Bridge	FA 4 near Terrebonne-county road near Lower Bridge	6.80
397	Bend-Butler Ranch	FA 21 in Bend-FAS 398 near Bend	8.33
398	Alfalfa	FA 21 near Bend-county road near Alfalfa	10.40
400	Long Pine School	FAS 320 near O'Neil-one mile south of Jefferson county line	4.40
401	Prineville-McKay Creek	FA 5 in Prineville-Upper McKay Creek	9.00
402	Prineville-Davis Ranch	FA 5 in Prineville-FAS 403	17.50
403	Paulina	FAS 402-Paulina	39.53
404	Powell Butte	FA 5 west of Pilot Butte-south 5.72 miles	5.72
405	Lakeview-Burns	FA 16 at Valley Falls-FA 21 at Okerman Ranch	90.10
406	Warner Valley	FA 16 near Lakeview-Plush	46.21
407	West Side	FAS 408-south of West Side	5.15
408	Cottonwood Creek	FAS 410 west of Lakeview-1½ miles north of West Side	5.00
410	Klamath Falls-Lakeview	FA 4 in Klamath Falls-FA 16 in Lakeview	95.84
411	Maddox Corner-Thomas Creek	FAS 410 west of Lakeview-north to Thomas Creek	5.40
414	Fort Rock	FA 16 west of Fort Rock-Fort Rock	6.50
416	Dairy-Bonanza	FAS 410 at Dairy-FAS 418 at Bonanza	7.02
417	Bonanza-Malin	FAS 419 west of Malin-FAS 416 in Bonanza	14.80
418	Bonanza-Lorenz Mill	FAS 416 in Bonanza-FAS 410 at old Lorenz Mill	8.00
419	Klamath Falls-Malin	FAS 410 east of Klamath Falls-Oregon-California line	27.14
420	Klamath Lake	FAS 4 in Klamath Falls-State Highway 22 at Fort Klamath	49.70
421	Chiloquin-Southwest	State Highway No. 22 near Lobert-FAS 424 at Chiloquin	3.89
422	Malone	FAS 419 east of Merrill-Oregon-California line	1.80
423	Hatfield	FAS 419 east of Merrill-Oregon-California line	2.51

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
424	Klamath Agency-Chiloquin	State Highway 22 south of Klamath Agency-Chiloquin	4.60
425	Modoc Point	FA 4 at Modoc Point-State Highway 22 south of Klamath Agency	12.90
427	Midland	FA 33, 1½ miles north of Midland-FAS 410 at Altamont	5.61
428	Lower Klamath	FA 33 south of Midland-FAS 419 west of Dehlinger	7.55
429	Sprague River	FAS 410 west of Beatty-Sprague River	9.30
430	Bonanza-Langell Valley	FAS 417 near Bonanza-Lorella-FAS 416 in Bonanza	19.20
431	Olene-Poe Valley	FAS 410 near Olene-FAS 417 south of Bonanza	10.00
432	Keno-Worden	FA 33 near Worden-FA 15 at Keno	7.20
433	Hermiston	FAS 443 west of Echo-FAS 462 in Hermiston	10.63
434	Altamont-Mock Corner	FAS 428, 3 miles west of Dehlinger-FAS 427 at South Klamath	7.00
437	Kimberly-Long Creek	FA 6 at Kimberly-3 miles east of Malheur National Forest Boundary	47.23
439	Heppner	FA 1 at Heppner Junction-FA 30 at Nye	84.37
440	Mikkalo	FA 6 near Olex-Mikkalo	2.30
441	Lonerock	FAS 378 east of Condon-Lonerock	14.00
443	Lexington-Echo	FAS 439 at Lexington-FA 1 east of Echo	39.56
444	Ione-Morgan Ranch	FAS 439 at Ione-Morgan Ranch	9.70
447	John Day-Burns	FA 31 north of Burns-FA 5 in John Day	67.05
448	Austin Spur	FA 5 south of Austin-Austin	2.69
449	Beech Creek	FA 5 at Mt. Vernon-FA 30 northwest of John Day	5.35
450	Frenchglen	FAS 457 east of Burns-Frenchglen	62.00
452	Prairie City-Blue Mountain Springs	FA 5 in Prairie City-Blue Mt. Springs	13.00
453	Logdell	FAS 447 north of Seneca-Logdell	7.10
454	Hermiston-Cold Springs	FAS 462 in Hermiston-FA 18 near Cold Springs	7.16
455	Rome-Princeton	FAS 456 north of Princeton-FAS 513 near Rome	61.71
456	Diamond Valley	FAS 457 near Crane-FAS 450 at Grain Camp	49.18
457	Burns-Crane	FA 21 in Burns-Crane	28.89
458	Drewsey	FA 31 south of Drewsey-Drewsey	2.60
459	Silvies River	FA 31 in Burns-Silvies River	5.50
461	Pendleton-Cold Springs	FA 1 in Pendleton-FA 18 at Cold Springs	30.54
462	McNary Dam-Echo	FA 1 north of Echo-FA 18 near McNary Dam	11.97
463	Ordnance Depot	FA 1 south of Ordnance-Ordnance Depot	0.41
464	Umapine	Sunnyside north of Freewater-Oregon-Washington line north of Umapine	7.25
465	Athena-West	FA 19 in Athena-FAS 467, 2 miles south of Helix	7.98
466	Myrick	FAS 461 southeast of Holdman-FAS 467, 3 miles south of Helix	8.46
467	Havana-Stanton	½ mile north FA 19 at Havana-Stanton	14.20
468	Pendleton-Airport	FA 1 near Pendleton-Pendleton Airport	1.36
469	Weston-Elgin	FA 19 at Weston-FA 7 at Elgin	41.39
470	Stanfield-Pendleton	FA 1 south of Stanfield-FA 1 near Pendleton	24.65
471	Milton-South Fork Walla Walla River	FA 19 in Milton-Power Plant	8.40
472	Adams-Cayuse	FA 19 at Adams-FAS 473 at Cayuse	15.60
473	Adams-Mission	FA 19 at Adams-FA 1 near Mission	13.60
474	Athena-Thorn Hollow	FA 19 at Athena-FAS 472 north of Thorn Hollow	8.20

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
475	Mission-Thompson Ranch	FA 1 near Mission-Thompson Ranch	5.90
477	Starkey	FA 1 near Hilgard-Starkey	17.00
478	Mt. Glen	FA 7 in La Grande-FAS 481 at Iowa School	6.20
479	Lower Cove	FA 7 south of Alicel-Grande Ronde River	5.50
480	Enterprise-Wallowa Lake	FA 7 in Enterprise-south end Wallowa Lake	12.81
481	Island City-Imbler	FA 7 at Island City-Summerville-FA 7 at Imbler	20.35
482	Little Sheep Creek	FAS 480 in Joseph-Imnaha	30.42
483	Cove	FAS 7 at Island City-Cove-FA 1 at Union	22.16
484	Alder Slope	FAS 480 in Enterprise-Alder Slope	3.50
485	Zumwalt	FAS 480 north of Joseph-Crow Creek Road Junction	5.00
486	Medical Springs	FA 1 in Union-FAS 505 near Baker	42.67
487	Whiskey Creek	FA 7 in Wallowa-Junction with county road northeast of Wallowa	7.00
488	North Powder River	FA 1 in North Powder-FAS 503 northwest of Haines	5.00
489	Whiskey Creek-Lostine	FAS 487 east of Wallowa-FA 7 in Lostine	6.80
490	Flora	FA 7 in Enterprise-Oregon-Washington line	45.28
491	Johnson Ranch-Wallowa	FA 7 northwest of Wallowa-FA 7 in Wallowa	3.70
497	Hurricane Creek	FAS 480 in Enterprise-FAS 480 in Joseph	7.50
500	Robinette	FAS 505 east of Richland-Brownlee	10.81
501	Baker-Unity	FA 5 north of Unity-FA 1 in Baker	46.31
502	Sumpter	FAS 501 at Salisbury-Sumpter	19.86
503	Haines-Anthony	FA 1 near Haines-Anthony Creek	11.30
504	Pine Creek	FAS 505 in Halfway-Long Branch Creek	3.72
505	Baker-Cornucopia	FA 1 in Baker-Cornucopia	73.62
506	Baker-Goodrich Creek-Wingville	FA 1 in Baker-Goodrich Creek-Wingville	13.60
507	Rock Creek	FAS 503 west of Haines-Rock Creek-FA 1 in Haines	8.70
508	Muddy Creek	FAS 503 northwest of Haines-FAS 507 north of Rock Creek	4.40
509	Keating	FAS 505 south of Keating-Keating	3.20
510	New Bridge	FAS 505 at Richland-New Bridge	2.10
511	Richland-South	FAS 505 at Richland-Daly Creek	3.00
512	Halfway-North	FAS 505 at Halfway-East Pine Creek	3.00
513	I. O. N.	Oregon-Nevada line at McDermitt-Oregon-Idaho line north of Jordan Valley	116.80
514	Cairo-Nyssa	FA 5 at Cairo-Oregon-Idaho line at Nyssa	8.64
515	East Cow Hollow	FAS 518 at Owyhee-East Cow Hollow	7.50
516	Weiser Spur	FA 1 south of Weiser-Oregon-Idaho line at Weiser	1.99
517	Payette Spur	FA 1 north of Payette-Oregon-Idaho line at Payette	1.67
518	Nyssa-Homedale	FAS 514 in Nyssa-Oregon-Idaho line west of Homedale	22.47
519	Graham Boulevard	FA 31 in Vale-FA 31 south of Hope	10.72
520	Adrian-Parma	FAS 518 near Adrian-Oregon-Idaho line west of Parma	2.77
523	Harper Loop	FAS 525 at Harper-FAS 525 south of Harper	6.30
524	Jordan Valley	FAS 513 west of Jordan Valley-FAS 513 north of Jordan Valley	10.18

TABLE V—Continued

F. A. S. No.	Name	Termini	Length in Miles
525	Harper-Little Valley	FA 31 south of Harper-FA 31 southeast of Little Valley	9.20
527	Ontario-Cox Corner	FA 5 near Ontario-FA 5 west of Cairo	6.60
528	Ontario-Morgan Avenue	FA 5 in Ontario-FA 514 south of Cairo	6.40
529	Morgan Avenue-Nyssa	FAS 514 at Nyssa-Morgan Avenue south of Cairo	6.10
530	Enterprise Avenue	FAS 518 south of Nyssa-FAS 515 in East Cow Hollow	3.90
532	Oregon Trail School-Lapin Corner	FAS 518 near Kingman-FAS 515 in Cow Hollow	2.30
533	Rock Spring Canyon	FAS 515 west of Owyhee-road junction north of Mitchell Butte	4.00
535	Oregon Slope	FA 1 north of Payette Junction-FA 1 south of Weiser Junction	3.70
536	Ironside-South	FA 5 at Ironside-South Fork Willow Creek	3.80
537	Juntura-Beulah	FA 5 at Juntura-Beulah	14.50
538	East Summerville	FAS 481 near Summerville-FAS 481 east of Summerville	1.80
			4.416.90

541 Crater Lake-Lobert
[illegible] Adair-Arone-Caldwell ? — 4.4[illegible]

Improvement of Tumalo-Deschutes Secondary Highway in Deschutes County.

Urban Federal Aid Highways. By provision of the Federal Aid Highway Act of 1944, whereby primary federal aid highways within "urban areas" were set up as an "Urban Federal Aid Highway System" and made eligible to have expended on them federal aid funds of a class designated "Urban Federal Aid Funds." An urban area, as defined in the Act, is an area including and adjacent to a municipality or other urban place having a population of 5,000 or more according to the latest available federal census. The boundaries of the urban area for each place of 5,000 or more are to be as fixed by the State Highway Department subject to the approval of the Public Roads Administration.

In Oregon, there are 16 cities of populations 5,000 or more. Accordingly there are 16 urban areas. The boundaries of these areas as at present fixed by the Highway Department are in most cases the same as corporate limits of the cities. The mileage of primary federal aid highways within the 16 areas is 123.76. Thus the mileage of urban federal aid highways in Oregon is 123.76. The areas and their respective mileages of urban federal aid highways, are as follows:

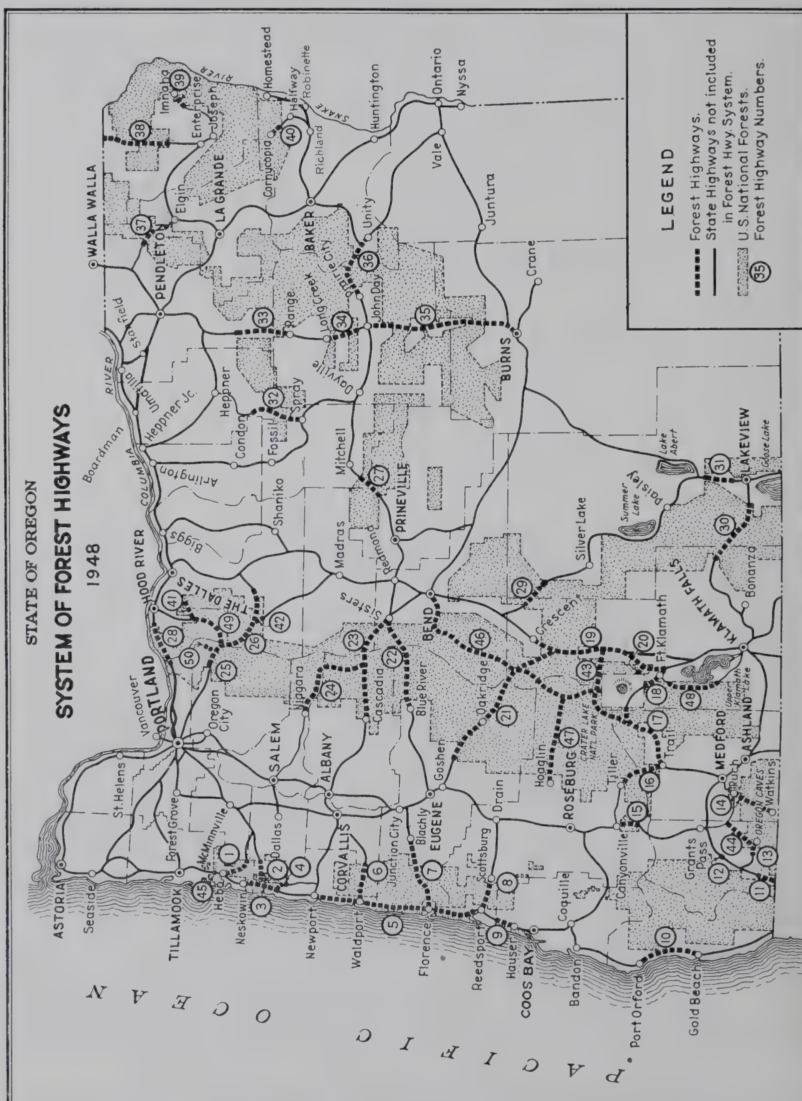
Albany	2.83	Klamath Falls	6.19
Astoria	6.16	La Grande	2.14
Baker	3.94	Medford	4.26
Bend	5.13	Oregon City	2.01
Coos Bay	5.65	Pendleton	6.29
Corvallis	6.16	Portland	56.02
Eugene	7.16	Salem	6.08
Grants Pass	1.80	The Dalles	1.94
		Total	123.76

Federal funds allotted to Oregon for use on urban federal aid highways are as follows:

Fiscal year 1946	$ 810,873
Fiscal year 1947	810,873
Fiscal year 1948	800,477
Fiscal year 1949	None
Fiscal year 1950	720,430

Public Lands Highways. Public Lands Highways are highways or parts of highways which, because of their being on unappropriated and unreserved public lands, Indian reservations or other federal reservations, are eligible to have Public Lands Highway Funds expended upon them. No definite

system has been designated for this class of highways, but to date use of the Public Lands Highways Funds has been confined in large part to the Warm Springs Highway across the Warm Springs Indian Reservation and the I. O. N. Highway in Malheur County.



Federal funds allotted to Oregon for use on federal lands highways during the fiscal years 1939 to 1943 are as follows:

Fiscal year 1939	$ 167,394
Fiscal year 1940	60,542
Fiscal year 1941	129,201
Fiscal year 1942	96,839
Fiscal year 1943	99,100

There have been no allotments of funds of this class since 1943.

Federal Forest Highways. The federal Forest Highway System comprises such main highways within or across national forests as have been designated by the Federal Forest Service, the Public Roads Administration and the State Highway Commission for improvement with federal forest highway funds. A list of the highways included in this system is given in Table VI.

Construction work financed with Forest Highway Funds is contracted and supervised by the Public Roads Administration. However, the Highway Commission has a voice in the selection of the projects to be undertaken, and in matters of location and standards of construction.

Recent improvement of Willamette Highway east of Goshen in Lane County.

Prewar expenditures of Forest Highway Funds in Oregon were at the rate of about $1,200,000 per year. Allotments for the years 1946 to 1948 were at the rate of about $3,400,000 and for the year 1950 about $2,700,000.

TABLE VI

Oregon Forest Highway System

Forest Road No.	State No.	Name	Termini	Length in Miles
1	32	Three Rivers	Hebo-East Forest Boundary	13.9
2	39	Salmon River	Oregon Coast Highway-~~West~~ Polk County Line	13.7
3	9	Oregon Coast	Neskowin-Siletz River	22.8
4	181	Siletz ~~River~~	Oregon Coast Highway-Forest Boundary	6.0
5	9	Oregon Coast	Yaquina Bay-Umpqua River	68.7
6	27	Alsea	Walport-Benton County Line	28.4
7	34	Siuslaw	Oregon Coast Highway-Blachly	45.1
8	45	Umpqua	Reedsport-Scottsburg	15.6
9	9	Oregon Coast	Douglas County Line-Hauser	9.7
10	9	Oregon Coast	Port Orford-Gold Beach	31.3
11	25	Redwood	O'Brien Schoolhouse-State Line	5.4
12	25	Redwood	Summit Hayes Hill-Love Station	2.0
13	38	Oregon Caves	3 miles west of Forest Boundary to Caves	11.5
14	....	Applegate (county road)	Ruch-Watkins	17.0
15	1	Pacific	Canyonville-2¾ miles south of Forest Boundary	11.0
16	230	Tiller-Trail	Tiller to Trail	26.3
17	22	Crater Lake	Trail-Park Boundary Bdry	44.0
18	22	Crater Lake	~~Fort Klamath~~-Park ~~Boundary~~ to Sun Mountain	7.7
19	*	Dalles-California	Crescent-~~Old Fort Klamath~~ to Crater Lake	57.8
20	424	Sand Creek	Sun Mountain Highway-Park Boundary	4.3
21	18	Willamette	Lowell to Dalles-California Highway	73.3
22	15	McKenzie	Blue River to Sisters	51.2
23	16	Santiam	1 mile east of Foster to Sisters	69.5
24	162	North Santiam	Niagara-Santiam Highway	44.6
25	26	Mount Hood	West Forest Boundary to Wapinitia Jct.	15.4
26	44	Wapinitia	Mt. Hood Highway to 1 mile north of Wapinitia Bdry	32.6
27	41	Ochoco	West Forest Boundary to North Forest Boundary Bdry	19.6
28	2	Columbia River	West Forest ~~Boundary~~ to East Forest Boundary Bdry	27.3
29	19	Fremont	West to East Forest ~~Boundary~~ Bdry	16.2
30	20	Klamath Falls-Lakeview	West to East Forest ~~Boundary~~ Bdry	29.4
31	19	Fremont	4 miles south of Valley Falls to 6 miles north of Lakeview	13.0
32	321	Heppner-Spray	Mouth of Chapin Creek to John Day Highway	26.3
33	28	Pendleton-John Day	2½ miles northwest of Albee to Range	30.7
34	28	Pendleton-John Day	Long Creek-South Forest Boundary	20.4
35	**	John Day-Burns	John Day-Burns	70.2
36	5	John Day	Prairie City-Unity	42.6
37	330	Weston-Elgin	McDougall's Camp to Summerville-Elgin Road	23.2
38	11	Flora-Enterprise	State Line to South Forest Boundary	30.3
39	350	Little Sheep Creek	West Forest Boundary to Imnaha	8.8
40	413	Baker-Cornucopia	Carson to Cornucopia	5.0

TABLE VI—Continued

Forest Road No.	State No.	Name	Termini	Length in Miles
41	....	Loop-Dalles (county road)	Mt. Hood Highway to East Forest Boundary	15.0
42	53	Warm Springs	Wapinitia Highway to Forest Boundary	6.9
43	†	Diamond Lake	Union Creek to Dalles-California Highway via Diamond Lake	38.9
44	‡	Williams Creek	Provolt to Oregon Caves Highway	20.0
45	9	Oregon Coast	North Forest Boundary to South Forest Boundary between Beaver and Hebo	1.1
46	§	Cascade Lakes	North Boundary of Crater Lake Park to Bend	101.0
47	....	North Umpqua	Rock Creek to Cascade Lakes Highway	60.0
48	421	Klamath Lake-West Side	Seven Mile Creek to Forest Boundary southeast of Odessa Creek	20.0
49	26	Mount Hood	Wapinitia Junction-North Forest Boundary	21.5
50	....	Timberline	Mt. Hood Highway Junction to Timberline Lodge	5.6
			Total mileage on Forest Highway System	1,381.8
			Mileage on State System	1,187.5

* Includes 30.8 miles on Highway 4 and 27.0 miles on Highway 428.
** Includes 67.0 miles on Highway 48 and 2.5 miles on Highway 7.
† State Secondary Highways 233 and 425.
‡ Includes 7.2 miles on State Secondary Highway 261.
§ Includes 17.1 miles on State Secondary Highway 232 and 372.

County Roads. County roads are those roads, control of which, and responsibility for which, rests with the counties by and through the respective county courts or county commissions. They comprise those roads in the state which are not a part of either the state highway system or the systems of roads over which control is held by the federal government by reason of their being located in national forests, national parks and Indian reservations.

County roads constitute about 55 per cent of all roads in the state. The total mileage is roughly 35,000. Of them, 1,365 miles are in the federal aid secondary highway system.

Funds with which county roads are improved and maintained come from the following sources:

1. Property taxes.
2. Road-user fees and taxes, including motor vehicle license fees, gasoline tax, motor transportation fees and fines for traffic law violations.
3. Federal aid.

Of the road-user fees and taxes collected within the state, 19 per cent is allotted to counties for use on their county roads. In 1947, this 19 per cent amounted to $5,318,952.

Of those of the county roads which are on the federal aid secondary highway system (1,365 miles) are eligible to have federal aid funds expended upon them. Allotments of this class of funds to county roads for the fiscal years 1946, 1947 and 1948, inclusive of state funds required to match the federal share, will total $3,200,000.

Expenditure made by counties, on county roads, during the year 1947, as reported to the Highway Commission by county officials total $9,993,904.

Oceanlake Section in Lincoln County is typical of pavement widening within congested areas.

FINANCES

Sources of State Highway Income

Moneys used by the State Highway Commission in the improvement, maintenance and operation of highways and parks come from two general sources: (1) State funds, consisting principally of the Commission's share of the motor vehicle revenues collected by the State, and (2) Federal funds coming to the State in the form of Federal Aid. Some additional moneys are received as cooperation from counties and other agencies, but the amounts involved are small.

The state funds above referred to are derived almost entirely from road-user taxes and fees as follows:

1. Gasoline tax.
2. Diesel fuel tax.
3. Motor vehicle license fees and operators fees.
4. Motor transportation fees.
5. Fines for traffic law violations.

Of the revenues yielded by these taxes and fees, 19.0 per cent is allotted to the counties for use on county roads, and 10.0 per cent is allotted to the cities for use on city streets. From these revenues, also, an additional amount approximating 3.3 per cent is appropriated by the state legislature for use by the State Police Department. The remaining 67.7 per cent

TABLE VII

Distribution of Road-User Revenues as Between Counties, Cities, State Police and Highway Commission

Year	Total Revenue (after deduction or refunds and collection expense)	Amounts Paid During Calendar Year			
		To Counties	To Cities	To State Police	To Highway Commission
1941	$17,835,937.73	$2,410,961.39	$	$ 341,097.47	$15,083,878.87
1942	16,605,266.39	2,815,071.90	.....	344,252.46	13,445,942.03
1943	14,738,561.68	2,612,415.69	.....	390,898.76	11,735,247.23
1944	15,140,109.85	2,311,568.60	736,168.35	380,662.52	11,711,710.38
1945	16,734,157.53	2,340,748.48	745,461.30	428,111.75	13,219,836.00
1946	22,386,469.72	2,598,427.65	827,524.73	338,708.71	18,621,808.63
1947	26,909,331.93	5,318,951.55	1,116,720.52	766,460.09	19,707,199.77
1948	28,490,000.00	5,078,975.14	2,663,328.79	1,035,763.46	19,711,932.61
1949 (Est.)	29,890,000.00	5,540,000.00	2,840,000.00	722,000.00	20,788,000.00
1950 (Est.)	31,400,000.00	5,820,000.00	2,990,000.00	970,000.00	21,620,000.00

is placed at the disposal of the State Highway Commission for use on highways and parks.

Table VII shows in dollars and cents how the road-user revenues of the past several years have been shared between the counties, the cities, the State Police and the State Highway Commission.

Table VIII combines the State Highway Commission's income from road-user revenues with other state fund income and with federal aid and other cooperative income, to give the Commission's total income and to show the trends in that income during the period 1941 to 1950.

TABLE VIII

Incomes to Highway Commission From All Sources 1941 to 1950

Year	State Funds: Road-User Revenues	State Funds: Other State Sources	Federal Cooperative Funds	Miscellaneous Cooperative Funds	Total Income
1941	$15,083,878.87	$ 9,758.70	$2,810,894.93	$ 69,291.05	$17,973,823.55
1942	13,445,942.03	4,796.42	2,273,616.82	22,418.46	15,746,773.73
1943	11,735,247.23	2,907.87	4,341,584.26	34,050.00	16,113,789.36
1944	11,711,710.38	3,274.01	3,108,858.22	38,662.71	14,862,505.32
1945	13,219,836.00	4,333.64	2,290,000.27	2,411.01	15,516,580.92
1946	18,621,808.63	59,344.66	2,339,091.54	1,935.08	21,022,179.91
1947	19,707,199.77	76,554.92	6,771,812.00	38,621.33	26,594,188.02
1948 (Est.)	19,692,000.00	300,000.00	6,200,000.00	62,000.00	26,254,000.00
1949 (Est.)	20,788,000.00	300,000.00	7,500,000.00	260,000.00	28,848,000.00
1950 (Est.)	21,620,000.00	300,000.00	7,270,000.00	138,000.00	29,328,000.00

The recovery in income which has followed termination of the war has been remarkably rapid. The 1948 income (State funds) will exceed the highest of the incomes of prewar years by at least 30 per cent. However, since the 1948 road dollar is worth only about 50 cents as compared with the prewar dollar, the 1948 income is, in buying power, about 35 per cent less than that of the 1941 income. Even the very marked increase in federal aid which was made following the war, as a step to ward off unemployment and inflation, has failed to hold the purchasing power of highway income to the level of 1941. The 1941 income of $17,973,823 bought in 1941 as much as $35,000,000 will buy in 1948. Thus, in purchasing power, the 1948 income of $26,254,000 lacked $8,750,000 of being the equal of the 1941 income.

Incomes, 1947 and 1948

A detailed statement of the income received during the calendar year 1947 appears in Table IX. A similar statement showing estimated income for the calendar year 1948, is given in Table X.

The large cash balance shown in these tables as being on hand at the beginning of 1947 and again at the beginning of 1948, is the balance accumulated during the war years when construction activities of the State were curtailed as a war emergency and when such construction was done to meet the requirements of the war effort was paid for by the federal government. This balance was not drawn upon during 1947 due to the fact that postwar construction was then only beginning to get underway and expenditure thereon did not exceed

TABLE IX

Income for Calendar Year 1947

Source of Income	Gross Amount Paid by Motor Vehicle Owners	Collection Expense (Secretary of State and P. U. C.)	Net Amount for State Highways, State Police, Cities and Counties
State Funds:			
Motor vehicle license fees	$ 5,924,831	$ 975,681	$ 4,949,150
Gasoline tax ($21,244,538 less $2,706,652 refunds)	18,537,886	63,897	18,473,989
Diesel fuel tax	365,111	32,988	332,123
Motor transportation fees	3,350,682	409,963	2,940,719
Fines for traffic law violations	213,351	.....	213,351
Cash discounts	76,555	.....	76,555
Subtotals	$28,468,416	$ 1,482,529	$26,985,887
Less $766,460 contribution to state police, $5,318,952 to counties, and $1,116,720 to cities			7,202,132
Net receipts of state funds for highway purposes			$19,783,755
Cooperative Funds:			
1943 and prior federal funds			$ 333,765
Federal aid funds			2,829,033
Federal secondary funds			2,278,458
Federal urban funds			397,900
Federal access road funds			479,925
Federal strategic highway network funds			416,165
Federal flight strip funds			36,566
County cooperative funds			16,200
Miscellaneous cooperative funds			22,421
Subtotal, cooperative funds			$ 6,810,433
Total, all receipts			$26,594,188
Balance on hand, beginning of year			$16,810,812

current income. Therefore, the same balance remained on hand again at the beginning of 1948. This balance ($17,300,000) is budgeted to be drawn upon for $5,000,000 in 1948, $8,000,000 in 1949 and $4,300,000 in 1950, during which years it will be vitally needed, in supplementation of current income, to bring to completion the three-year postwar federal aid program now largely under contract and to carry on the second postwar program for which federal aid funds were made available by the federal aid highway act of 1948.

The fact that the income for 1948 will be no larger than that of 1947 is attributable, in part, to greatly increased amounts contributed to counties, cities and state police and, in part, to decreased revenue paid by commercial trucks. The increase

TABLE X

Estimated Income for Calendar Year 1948

Source of Income	Gross Amount Paid by Motor Vehicle Owners	Collection Expense (Secretary of State and P. U. C.)	Net Amount for State Highways, State Police, Cities and Counties
State Funds:			
Motor vehicle license fees	$ 4,275,000	$ 1,275,000	$ 3,000,000
Gasoline tax ($23,070,000 less $2,800,000 refunds)	20,270,000	70,000	20,200,000
Diesel fuel tax	71,000	6,000	65,000
Motor transportation fees	5,700,000	700,000	5,000,000
Fines for traffic law violations	225,000	.....	225,000
Cash discounts	50,000	.....	50,000
City allotment funds to be expended by Highway Commission	250,000	.....	250,000
Subtotals	$30,841,000	$ 2,051,000	$28,790,000
Less $1,035,000 contribution to state police, $5,100,000 to counties, and $2,663,000 to cities			8,798,000
Net receipts of state funds for highway purposes			$19,992,000
Cooperative Funds:			
1943 and prior federal funds			$ 50,000
Federal aid funds			3,700,000
Federal secondary funds			2,073,000
Federal urban funds			300,000
Federal access road funds			77,000
County cooperative funds			36,000
Miscellaneous cooperative funds			26,000
Subtotal, cooperative funds			$ 6,262,000
Total, all receipts			$26,254,000
Balance on hand, beginning of year			$17,312,000

in contributions to counties, cities and state police amounted to $1,600,000 and was a result of increased rates of contribution as authorized by act of the 1947 Legislature. The decrease in the amount of revenue paid by commercial trucks amounted to an estimated $1,250,000 and was an unforeseen and unintended result of the new motor transportation act passed by the Legislature of 1947. Under that Act, the trucks paid, in motor transportation fees, $1,560,000 more than they would have paid under the previous act, but in registration fees and diesel fuel tax they paid $2,810,000 less. Together, the increase in contributions and the decrease in truck revenues wholly offset the increase in income which would normally have accrued to the Highway Department in 1948 as a result

TABLE XI

Anticipated Incomes for Calendar Years 1949 and 1950

Source of Income	1949	1950
State Funds:		
Motor vehicle license fees (net)	$ 3,200,000	$ 3,400,000
Gasoline tax (net)	21,650,000	22,750,000
Motor transportation fees (net)	4,800,000	5,000,000
Fines for traffic law violations	240,000	250,000
Receipts from rentals, discounts, etc.	50;000	50,000
City allotment funds to be expended by Highway Commission	250,000	250,000
Subtotals	$30,190,000	$31,700,000
Less contributions to state police	722,000	970,000
Less contributions to counties	5,540,000	5,820,000
Less contributions to cities	2,840,000	2,990,000
Subtotals	$ 9,102,000	$ 9,780,000
Total estimated receipts of state funds for highway purposes	$21,088,000	$21,920,000
Cooperative Funds:		
1943 and prior federal funds	$ 400,000	$ 150,000
Federal aid funds, primary	3,200,000	3,600,000
Federal secondary funds	2,275,000	2,475,000
Federal urban funds	1,000,000	1,045,000
Federal access road funds	70,000	.....
Federal advance engineering funds	165,000	.....
Federal emergency relief funds	390,000	.....
County cooperative funds	138,000	138,000
Miscellaneous cooperative funds	122,000	.....
Subtotals, cooperative funds	$ 7,760,000	$ 7,408,000
Totals, all estimated receipts	$28,848,000	$29,328,000
Estimated balance on hand, beginning of year	$12,510,000	$ 4,583,000

of growth in motor vehicle registration, motor transportation, gasoline consumption, et cetera.

Anticipated Incomes, 1949 and 1950

Assuming that the basis on which motor vehicle revenues are assessed to motor vehicle owners and distributed among governmental agencies are continued without change through 1949 and 1950, State Highway Department incomes for the years 1949 and 1950 should run about $28,848,000 and $29,328,000, respectively. These incomes contemplate that motor vehicle revenues will increase at rates ranging from five to seven and one-half per cent per year and that collections of federal aid will run about one and one-quarter million dollars higher, each year, than in 1948.

Itemized statements of the incomes expected during the years 1949 and 1950 are given in the accompanying Table XI.

Expenditures, 1947 to 1950

During the war period, expenditures of the Highway Department slumped from an all-time high of $17,754,986, in 1941, to a low of $9,928,101, in 1945. This slump was occasioned by wartime curtailment of work and it exceeded considerably, in amount, the corresponding slump in highway income. As a result, there was accumulated in the State Highway Fund as of January 1, 1947, an unexpended balance of $16,810.812.

While this balance was being accumulated, the State's highways were deteriorating at an even faster rate. When the war ended, the needs grown out of deferred maintenance and deferred improvement work greatly exceeded the amount of the balance. Immediate expenditure of the balance upon this deferred work appeared to be indicated, but man-power and material shortages prevented such immediate expenditure. Accordingly, use of the accumulated balance is being extended over a period of three or four years as obstacles in the way of construction activities clear away. Under this procedure, expenditures during each of the years 1948 to 1950, inclusive, will exceed the current income of the year and before the end of 1950, the whole of the accumulation will have been expended. Amounts to be expended during those years

as well as the amounts expended during some of the preceding years are as follows:

Year	Amount Expended
1941	$17,754,986
1942	15,586,817
1943	13,504,023
1944	11,646,952
1945	9,928,101
1946	17,812,016
1947	26,093,362
1948 (Estimated)	31,055,760
1949 (Estimated)	36,775,100
1950 (Estimated)	34,006,500

In purchasing power, expenditures have not yet reached the level of 1941. The expenditure of $36,775,100 proposed for 1949 will purchase little, if any, more, in work performance, than did the $17,754,986 expended in 1941.

Detailed statements showing expenditures for the years 1947 and 1948 and anticipated expenditures for the years 1949 and 1950 appear in Tables XII and XIII.

Improvement of the Pacific Highway in Ashland adjacent to the City Plaza.

TABLE XII

Expenditures for Calendar Year 1947 and 1948

Class of Expenditures	1947 Actual	1948 Estimated
Capital Outlays:		
1943 and prior federal projects	$ 27,288	$ 292,000
Federal aid projects	4,645,287	7,150,000
Federal secondary projects	4,488,936	3,125,000
Federal urban projects	717,644	850,000
Federal access road projects	410,585	130,000
Federal strategic highway projects	588,557	50,000
Federal flight strip projects	90	.....
Federal emergency relief projects	.....	33,000
State construction projects	1,786,304	3,008,000
Expenditures of city allotments	.....	250,000
Cooperation in forest road work	200,000	190,000
Minor betterment	552,958	765,400
Surveys	291,956	283,500
Property acquisition, general expense	69,628	99,300
Purchase of rights of way, quarries, etc.	709,939	1,900,000
Purchase of parks	81,259	50,000
Improvement of parks	73,265	100,000
Improvement of maintenance stations, etc.	134,544	256,000
Equipment purchases, sales and depreciation	884,662	747,600
Subtotals, capital outlays	$15,662,902	$19,279,800
Maintenance:		
Special maintenance	$ 381,665	$ 802,000
General maintenance, primary	4,752,248	5,600,000
General maintenance, secondary	1,483,101	1,700,000
Maintenance of county roads	17,792	20,000
Maintenance of city streets	10,798	.....
District maintenance superintendence	172,374	210,200
Radio communication system	19,399	24,500
Maintenance station and scale upkeep	65,021	80,000
Truck load inspection	130,033	155,400
Subtotals, maintenance	$ 7,032,431	$ 8,592,100
Miscellaneous:		
Administration and general supervision	$ 718,885	$ 894,185
Planning and traffic surveys	183,486	222,100
Travel and information bureau	229,672	241,100
Operation of parks	116,361	170,800
Operation of drawbridges and ferries	128,115	138,000
Contribution to retirement fund	332,870	350,000
Increase in revolving fund	350,000	.....
Legislative interim committee expense	12,125	77,875
Miscellaneous general expense	74,598	64,800
Service and clearing accounts	474,630	420,000
Bond interest and maturities	777,287	605,000
Subtotals, miscellaneous	$ 3,398,029	$ 3,183,860
Totals, all purposes	$26,093,362	$31,055,760

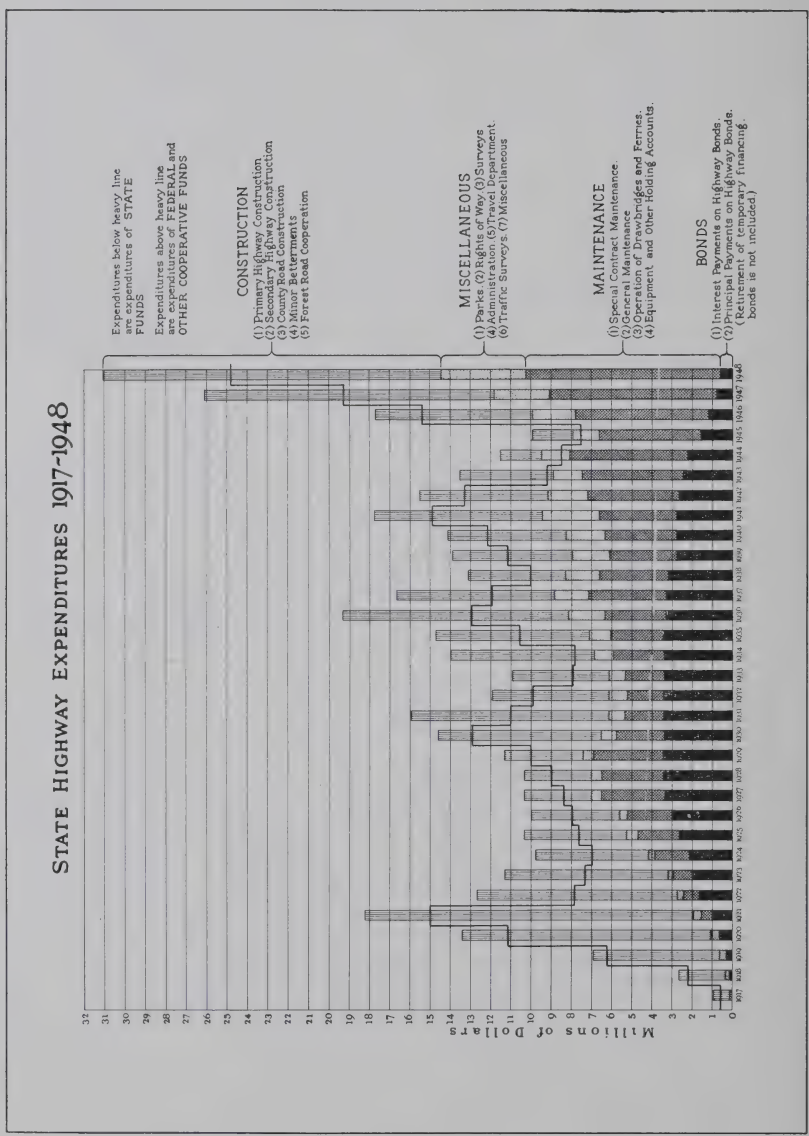
TABLE XIII

Anticipated Expenditures for Calendar Years 1949 and 1950

Class of Expenditures	1949	1950
Capital Outlays:		
1943 and prior federal projects	$ 400,000	$ .....
Federal aid projects, primary	6,000,000	6,000,000
Federal secondary projects	3,050,000	3,550,000
Federal urban projects	2,550,000	1,730,000
State construction projects	4,000,000	2,300,000
Expenditure of city allotments	250,000	250,000
Cooperation in forest road work	150,000	.....
Minor betterment	850,000	600,000
Surveys	420,000	370,000
Property acquisition, general expense	106,000	115,000
Purchase of rights of ways, quarries, etc.	2,690,000	2,205,000
Purchase of parks	155,000	100,000
Improvement of parks	275,000	95,000
Improvement of maintenance stations, etc.	450,000	225,000
New state office building	300,000	1,300,000
Equipment purchases, sales and depreciation	637,000	394,000
Contingency reserve, capital outlays	770,000	770,000
Subtotals, capital outlays	$23,053,000	$20,004,000
Maintenance:		
Special maintenance	$ 500,000	$ 500,000
General maintenance, primary	6,080,000	6,500,000
General maintenance, secondary	1,800,000	1,900,000
Maintenance of county roads	25,000	25,000
District maintenance superintendence	226,000	240,000
Radio communication system	28,000	28,000
Maintenance station and scale upkeep	97,000	100,000
Truck load inspection	162,000	165,000
Contingency reserve, maintenance	1,240,000	1,240,000
Subtotals, maintenance	$10,158,000	$10,698,000
Miscellaneous:		
Administration and general supervision	$ 1,002,000	$ 1,057,000
Planning and traffic surveys	241,000	225,000
Travel information bureau	250,000	250,000
Operation of parks	287,000	290,000
Operation of drawbridges and ferries	140,000	145,000
Contribution to retirement fund	400,000	415,000
Miscellaneous general expense	92,000	85,000
Service and clearing accounts	350,000	150,000
Bond interest and maturities	512,000	397,000
Contingency reserve, miscellaneous	290,000	290,000
Subtotals, miscellaneous	$ 3,564,000	$ 3,304,000
Totals, all purposes	$36,775,000	$34,006,000

Anticipated Deficit, End of 1950

Expenditure estimates for the year 1949 and 1950, as given in Table XIII, contemplate the carrying on of a highway construction program which will utilize federal aid funds as



rapidly as they become available. Such a program will fall far short of meeting the highway improvement needs as estimated by the Legislative Interim Committee but, even then, will exceed by $3,345,000 the funds expected to be available to the Department during the period unless some action is taken by the 1949 Legislature to increase state highway income. This situation is shown as follows:

Cash balance on hand, Jan. 1, 1948	$17,311,638	
Estimated annual receipts:		
1948	26,254,000	
1949	28,848,000	
1950	29,328,000	
Total of funds available		$101,741,638
Estimate of funds required:		
1948 expenditures	$31,055,760	
1949 expenditures	36,775,000	
1950 expenditures	34,006,000	
End-of-year reserve required to meet payments to counties and cities due in January, 1951	3,250,000	
		$105,086,760
Deficit, December 31, 1950		$ 3,345,122

This deficit can be avoided by deferring work on construction projects in the federal aid program. Such deferment would, however, retard the payment of federal aid to the State, thereby necessitating additional deferments. Thus, the avoidance of a deficit of $3,345,122 would require deferment of federal aid work to an amount of about $6,000.000.

Federal Participation in Financing of State Highway Work

Much of the work being performed under the direct control and supervision of the State Highway Commission is financed in part with funds provided by the Federal Government. Federal funds thus utilized are of several classes, each class being subject to such special use and to such special limitation and control as may be specified for it by the Congress. The several classes that are currently active are as follows:

1. Federal Aid Primary Highway Funds
2. Federal Aid Secondary Highway Funds
3. Federal Aid Urban Highway Funds

The first two classes of the currently active funds were made available year after year for many years prior to the war with comparatively slight changes in annual amounts and with few changes in bases of application. The third class of the currently active funds was set up by the federal aid highway act of 1944, in recognition of the growing need for improvement of federal aid routes through cities and their surrounding urban areas. Presumably, this class of funds will be continued on a more or less permanent annual basis, the same as the federal aid primary highway funds and the federal aid secondary highway funds.

Federal allotments for the first two classes of funds were discontinued during the fiscal years 1944 and 1945, due to war conditions, but were resumed in 1946 in greatly increased amounts. They are expected to be continued more or less regularly for several years. Difficulties encountered by some states in getting their allotments under contract promptly resulted in there being no allotment for the fiscal year 1949 and in the 1950 and 1951 allotments being of somewhat smaller amount than were the allotments for 1946, 1947 and 1948. It is hoped that this condition can be corrected and that the Federal Government can be induced to increase, rather than decrease, the amounts of the annual allotments.

Federal funds for highway work are not turned over to the states in advance of construction. Instead, they are paid to the states in the form of reimbursement during and after the period that the work is in progress. They are paid only on projects for which the plans have been previously approved by the Public Roads Administration and for which the work is conducted in accordance with applicable requirements established by the Public Roads Administration.

The extent of federal participation in the costs of projects selected for federal aid is, basically, fifty per cent. However, in those states in which more than five per cent of the land area is unappropriated and unreserved public land and nontaxable Indian land, the ratio of federal participation is increased on a proportionate basis with the result that federal participation in Oregon is at the rate of 62.06 per cent.

Federal aid apportioned to a state must be placed under contract within one year after the close of the fiscal year for

TABLE XIV

Federal Aid Funds and Forest Road Funds Apportioned to Oregon

Period for Which Funds Are Apportioned	Federal Aid Funds	Forest Road Funds	Total
Total of prior apportionments*	$56,578,651.93	$22,432,047.89	$79,010,699.82
Act of September 5, 1940:			
July 1, 1941, to June 30, 1942			
Federal aid funds	1,647,906.00	947,711.00	2,595,617.00
Secondary or feeder road funds	288,383.00		288,383.00
Grade crossing elimination funds	228,715 00		228,715.00
Federal lands funds	96,839.00		96,839.00
July 1, 1942, to June 30, 1943			
Federal aid funds	1,649,132.00	950,642.00	2,599,774.00
Secondary or feeder road funds	288,598.00		288,598.00
Grade crossing elimination funds	228,533.00		228,533.00
Federal lands funds	99,100.00		99,100.00
Act of November 9, 1941:			
Period of war emergency			
Flight strip funds	1,196,180.00		1,196,180.00
Access road funds	5,194,140.00		5,194,140.00
Strategic network funds	2,689,873.31		2,689,873.31
Advance engineering surveys	164,913.00		164,913.00
Act of December 20, 1944:			
July 1, 1945 to June 30, 1946			
Federal aid primary funds	3,728,908.00	3,421,661.00	7,150,569.00
Federal aid Secondary ~~or feeder road~~ funds	2,544,582.00		2,544,582.00
Federal aid Urban funds	810,873.00		810,873.00
July 1, 1946 to June 30, 1947			
Federal aid primary funds	3,728,403.00	3,439,553.00	7,167,956.00
Federal aid Secondary ~~or feeder road~~ funds	2,544,245.00		2,544,245.00
Federal aid Urban funds	810,873.00		810,873.00
July 1, 1947 to June 30, 1948			
Federal aid primary funds	3,683,994.00		3,683,994.00
Secondary ~~or feeder road~~ funds	2,513,880 00		2,513,880.00
Urban funds	800,477.00		800,477.00
Act of June 29, 1948:			
July 1, 1949 to June 30, 1950			
Federal aid primary funds	3,330,486.00	2,756,755.00	6,087,241.00
Federal aid Secondary ~~or feeder road~~ funds	2,272,391.00		2,272,391.00
Federal aid Urban funds	720,430.00		720,430.00
Totals	$97,840,506.24	$33,948,369.89	$131,788,876.13

* For the detail of yearly allotments prior to 1942, see former reports of the State Highway Commission.

July 1, 1950 to
Federal aid primary funds
aid Secondary funds

which the apportionment is made. Amounts not so contracted revert to the federal government to be redistributed among all of the states. Under this arrangement, the State has about three years in which to use the apportionment for a given year.

Oregon's allotments of federal aid for each of the two fiscal years 1950 and 1951 are as follows:

Federal aid primary highway funds	$3,330,486
Federal aid secondary highway funds	2,272,391
Federal aid urban highway funds	720,430
	$6,323,307

The classes of projects to which the use of the several kinds of federal funds are limited are as described in the paragraphs which follow:

Federal Aid Primary Highway Funds: Federal aid primary highway funds can be applied only on permanent improvement projects on highways included in the Federal Aid Primary Highway System. A map of the system accompanies this report, and in the accompanying Table IV there are given the numbers, names, and lengths of the highways which comprise the system. The total mileage of federal aid primary highways is 3,934.6 miles, which is approximately 80 per cent of the total mileage in the Primary State Highway System.

Federal Aid Secondary Highway Funds: Federal aid secondary highway funds are available for use only on state highways and county roads included in the federal aid secondary highway system. This system includes at present 4,416 miles of highways of which 884 miles are primary state highways, 2,167 miles are secondary state highways and 1,365 miles are county roads. The names, numbers and mileages of the highways and roads comprised in the system are as given in Table V.

Federal Aid Urban Highway Funds: The use of federal aid urban highway funds is limited to the portions of federal aid primary highways which are within cities having populations greater than 5,000 or within such areas immediately adjacent to such cities as may, by joint action of the Highway Commission and the Public Roads Administration, be designated "urban areas."

Federal Lands Highway Funds: Federal lands highway funds are not at present available but when available may be

used for work on unappropriated and unreserved public lands, nontaxable Indian lands, or other federal reservations other than forest reservations. The locations in Oregon at which these funds can be used advantageously are in the public land areas in the southeastern portion of the state, in the Warm Springs Indian Reservation, and the Klamath Indian Reservation. Use of the funds has been confined, so far, to the I. O. N. Highway in Malheur County, the Central Oregon Highway in Harney County, the Warm Springs Highway in Jefferson and Wasco Counties, the Klamath Falls-Lakeview Highway in Klamath County, and the Princeton-Rome Highway in Harney and Malheur Counties.

Federal lands highway funds may be applied on a 100 per cent basis on those parts of federal lands highway projects which are within the limits of public lands of the kinds mentioned in the preceding paragraph. None can be applied on such portions of projects as are on privately-owned lands or state-owned lands.

Forest Highway Work

Federal forest highway work, unlike federal aid highway work, is performed under the direct supervision of the federal Public Roads Administration. The State Highway Commission has a voice in the selection of projects and in the types and standards of construction, and sometimes has charge of the making of surveys, but does not in any other respect participate in the direction and performance of the work. The Public Roads Administration awards the construction contracts, engineers the work, pays the contractor and does all other things necessary to bring the work to satisfactory completion.

Federal allotments for forest highways have been made more or less regularly since 1916 and have been distributed among the states in proportion to areas and values of the national forest lands within the states. Oregon's share of these allotments has been $33,948,370. Of this amount, $20,822,031 has been expended on the state highway system to date. This expenditure of federal moneys has been supplemented by State cooperation in the amount of $6,393,679, and county cooperation in the amount of $2,286,030, bringing the total expenditures for forest highway projects on the state highway system to

Pavement widening on Old Oregon Trail within Ontario in Malheur County.

Paving on Old Oregon Trail through Nyssa in Malheur County.

$29,501,740. This expenditure has resulted in the completion of 864 miles of grading, 855 miles of rock surfacing, 179 miles of oiling and 129 miles of bituminous macadam.

Funds available for forest highway work during the fiscal years 1950 and 1951, are expected to total about $5,600,000.

Use of forest highway funds is limited to work on the Forest Highway System, which system has been arrived at by mutual agreement between the Public Roads Administration, the National Forest Service, and the State Highway Commission. It includes only roads which are within or near National Forests. A listing of the roads in the system appears in accompanying Table VI. Most, but not all, of the roads included are state highways.

Financial cooperation in forest highway work by the State or by counties is not required but is sometimes given. In all cases, the cost of right of way across lands not owned by the Federal Government is borne by the State or, if the road is a county road, by the county.

Sections of highway constructed with forest highway funds are maintained by the federal government for two years. Responsibility for maintenance is then assumed by the State or the county, depending on whether the project is, or is not, on the state highway sytem.

County and City Participation in Revenues from Motor Vehicle Imposts

Revenues from motor vehicle imposts are used first of all to pay refunds allowable under the provisions of the laws and to defray expenses incurred by the Secretary of State and the Public Utilities Commissioner in making collections of the revenues and in performing certain administrative and enforcement duties with which they are charged.

The balances remaining after payment of the refunds and expenses mentioned, are allotted as follows:

To Counties	19.0%
To Cities	10.0%
To State Police Department—A monthly allowance fixed by the State Legisuature, which amount at present approximates	3.3%
To Highway Commission—The balance remaining after payment of above listed allotments, which balance approximates	67.7%

County Participation in Income. The counties' share of motor vehicle imposts is distributed among the counties in proportion to the numbers of motor vehicles of all kinds registered from the respective counties during the preceding year. The distribution is made on a quarterly basis, the quarterly periods ending on March 31, June 30, September 30, and December 31. The total amount of each quarterly distribution is 19 per cent of the motor vehicle revenues credited to the State Highway Fund during the quarter. Distribution of each quarterly share is made to the counties on the last day of the month which follows the ending month of the quarter.

Funds received by the counties from this source are required by law to be used for the following purposes, preferentially in the order in which they are listed.

1. In payment of interest and principal on bonds issued for the purpose of road construction and improvement, unless other provision has been made for such payment.
2. In payment of the cost of preparing the roadbed, bridges, etc., for the construction of state highways, as provided by law, unless other provision has been made for payment of such cost.
3. In any other manner for general road improvement, at the discretion of the county court.

For detail as to the extent to which the counties have participated in these revenues, see Table VII in Section Two and Table No. 26 in Section Three of this report.

City Participation in Income. Of the cities' 10 per cent of the motor vehicle revenues, $250,000 is, each year, held in the State Highway Fund for expenditure on city streets by the State Highway Commission as hereinafter explained. The remainder of the cities' ten per cent is distributed among the cities of the State in proportion to population with the proviso that for any city having a population greater than 100,000, only two-thirds of such city's population is to enter into the calculation.

City participation is figured on a calendar year basis, the amount for the year being ten per cent of the total of motor

vehicle revenues credited to the State Highway Fund during the year. Distribution of the portion of the ten per cent which remains after subtraction of the $250,000 to be expended by the Highway Commission is made to the cities in a single payment on February 1 of the year following the year during which the revenues accrue.

Moneys distributed to the cities as above described are required by law to be used "for constructing, reconstructing, improving, repairing, or maintaining city streets which have not been designated as connecting links between state highways by the state highway department in the manner provided by law." Expenditure of the moneys by the cities may be deferred more than two years only when such deferment is approved by the State Highway Engineer. Cities having populations less than 1,000 may expend their respective shares of the moneys only on work for which plans have been submitted to and approved by the State Highway Commission.

Information as to the amounts the cities have received under the above described distribution of motor vehicle revenues is given in Table VII of Section Two and Table No. 27 of Section Three of this report.

The $250,000 of city allocation funds which is held in the State Highway Fund each year for expenditure by the Highway Commission on work on city streets is required by law to be expended "upon streets not a part of the state highway system within cities which are receiving excessive wear through sudden increases in population in the area or heavy and unusual industrial traffic." Determination of the distribution of the expenditures to be thus made by the Highway Commission is required to be made by the Highway Commission "after considering applications made to it therefor from the cities."

In its distribution of the $250,000 available for expenditure in 1948, the Highway Commission found it necessary to restrict its allocations to cities of populations less than 5,000, and to fix the sum of $15,000 as the maximum to be allotted to any one city. Applications for allotments were received from 56 cities. Allotments were granted to 28 cities. In a number of cases, the allotments were supplemented by funds or work contributed by the cities.

Allotments made by the Highway Commission from the $250,000 available for the year 1948 are listed in the accompanying Table XV.

TABLE XV

Allocation of City Street Funds

Allocation of $250,000 portion of Cities' Share of 1947 Motor Vehicle Revenue.

City	Amount Allotted From City Street Fund	Amount Contributed By City	Combined Total
Bandon	$ 1,214.00	$	$ 1,214.00
Beaverton	7,255.00	.....	7,255.00
Brownsville	15,000.00	6,000.00	21,000.00
Burns	9,000.00	.....	9,000.00
Central Point	15,000.00	.....	15,000.00
Cornelius	1,045.00	.....	1,045.00
Dallas	8,267.00	3,000.00	11,267.00
Dufur	4,812.00	.....	4,812.00
Florence	8,600.00	.....	8,600.00
Freewater	15,750.00	8,750.00	24,500.00
Garibaldi	3,920.00	300.00	4,220.00
Independence	8,530.00	2,025.00	10,555.00
Lakeview	12,151.00	.....	12,151.00
Milton	9,400.00	.....	9,400.00
Myrtle Point	15,000.00	.....	15,000.00
Newport	9,412.00	.....	9,412.00
Oakland	852.00	.....	852.00
Oakridge	15,000.00	.....	15,000.00
Ontario	7,645.00	.....	7,645.00
Powers	6,000.00	.....	6,000.00
Reedsport	1,403.00	.....	1,403.00
Riddle	15,000.00	.....	15,000.00
Scappoose	8,500.00	.....	8,500.00
Siletz	2,417.00	.....	2,417.00
Sweet Home	15,000.00	5,000.00	20,000.00
Tillamook	12,000.00	20,000.00	32,000.00
Waldport	4,500.00	.....	4,500.00
West Salem	15,000.00	12,695.00	27,695.00
Unallocated	2,327.00	.....	2,327.00
Totals	$250,000.00	$ 57,770.00	$307,770.00

REPORT OF CONSTRUCTION DEPARTMENT

H. G. SMITH, *Construction Engineer*

In the past biennium the Construction Department has been involved in the largest construction program in its history. The postwar program which was started in October, 1945, was getting well under way by the beginning of this biennium. During the period, contracts were awarded on 156 projects which were directly supervised by the Construction Department and involved a total expenditure of approximately $26,105,000.

During the war years, the majority of the projects were either access roads for governmental purposes, or strategic highway sections. During the time covered by this report, only one timber access road was contracted. This project involved the widening, straightening, and paving of 22.8 miles on the Clackamas Secondary Highway between Milwaukie and Estacada. Cost of this project (including engineering) was approximately $476,000.

Other type projects and approximate costs are as follows: Federal Aid Primary, 24 contracts amounting to $10,882,000; Federal Aid Secondary, 45 contracts amounting to $7,667,000; State financed construction projects, 51 contracts involving $4,754,000; and rock production projects, 32 contracts costing $1,180,500. Among the state projects were several involving work on city streets not on the State Highway System. The city jobs were financed by city funds from the $250,000 set aside for the purpose from the cities' share of state motor vehicle revenues as provided for in a legislative act passed by the Legislature in 1947.

Some of the more important of the projects undertaken or completed during the biennium are mentioned below.

Davies-Multnomah County Line Project: The year 1948 will see the completion of the Davies-Multnomah County Line Section of the Sunset Highway, which provides for a shorter, better route from Portland to the coast. All grading was completed during the period, and the paving will be completed before the end of the year. Construction on this section has been very difficult, due principally to abnormally wet weather during the fall of 1947 and the spring of 1948.

Pavement completed in 1948 on the Sunset Highway west of Portland.

Diamond Lake Junction-Lobert Project: Another project of considerable interest and importance to the public as a whole is the Diamond Lake Junction-Lobert Section of The Dalles-California Highway in Klamath County. This section, involving 38.9 miles of new grading, surfacing, and oiling was started in May, 1946, and completed in September, 1948. This new route saves 3.7 miles in distance, provides an 800 foot lower summit between Chemult and Klamath Falls and eliminates the narrow and otherwise difficult Sun Mountain grade. Trucking concerns are particularly aided by this route and report considerable savings in time and operating expense.

Warm Springs Highway: A project of particular importance to Eastern Oregon residents is that under way on the Warm Springs Highway between the Wapinitia junction near Bear Springs and Madras. The last of the grading, surfacing, oiling and bridge construction work on this section is under contract and all will be completed before the end of 1949.

Johns-Wolf Creek Project: On the Pacific Highway, the section between Johns (11 miles south of Canyonville) and Wolf Creek has been graded and paved during the biennium. Involving some of the heaviest grading work ever contracted by

the highway department, this project replaces approximately 14.4 miles of narrow, winding road which was far inadequate to handle the traffic using it. Curvature has been very much reduced and, on grades, extra lanes have been provided to enable the faster moving vehicles to pass slow moving trucks.

Spencer Creek-Newport Project: On the Oregon Coast route, surfacing and oiling was completed between Spencer Creek and Agate Beach in Lincoln County, and the grading and oiling of the section between Agate Beach and Newport has been placed under contract. It is anticipated that this section will be completed early in 1949.

Troutdale-Dodson Project: The Columbia River Highway between Troutdale and Dodson is gradually nearing completion. A hydraulic dredging contract costing $1,030,000 was awarded in April, 1947, and work was started soon after, filling in the portions of the grade between Troutdale and Wahkeena Creek, which had not been completed under previous contracts. A contract for topping and slope protection was awarded at the same time and amounted to $436,000. The Public Roads Administration let a hydraulic dredging contract about the same time covering the section from Wahkeena Creek to Dodson. All the above work will be completed before the winter of 1948-49, and a contract covering the paving between Troutdale and Dodson is to be let in November. The entire water grade route from Troutdale to Dodson should be open to traffic by late summer of 1949.

Rainier-Goble Project: Another project is the Rainier-Goble Section of the Lower Columbia River Highway, consisting of 3.69 miles of grading, surfacing and paving, at a cost of $745,000. This job eliminates a very narrow, crooked portion of Portland-Astoria route. Completion of the section is scheduled for August, 1949.

Madras-Prineville Highway: Of great benefit to Eastern and Central Oregon residents is the completion of the secondary highway between Madras and Prineville. Work on this section was started in 1940 but was, of necessity, discontinued during the war. Work was resumed in 1946 and the last of the surfacing and oiling work was finished in September, 1947. When the Warm Springs Highway is completed and used in con-

nection with this new cutoff, a material saving in time and distance will be afforded those traveling from Portland to John Day, Vale and eastern points.

Sheridan St.-Bancroft St. Section of Front Avenue: Completion of the Sheridan St.-Bancroft St. Section of Front Avenue in Portland completes connection of the Harbor Drive arterial with both Barbur Boulevard and the Ross Island Bridge, thus providing a high speed entrance to the business district of Portland for the heavy traffic from south and east over highways U. S. 99E, U. S. 99W and State 50.

Oregon City-New Era Project: The largest of the State financed projects is the Oregon City-New Era Section of the Pacific Highway East in Clackamas County. This contract was awarded May 5, 1948, and work was started May 10. Work consisted of widening the existing road from two to four lanes and repaving with asphaltic concrete pavement. Widening in some places entailed the blasting of the faces of bluffs along the road, and because of the close proximity of the Southern Pacific Railroad main line the contractor was forced to use extreme caution. Progress has been excellent and completion

Four-lane pavement completed on U. S. 99E between Oregon City and New Era.

of the project by the specified date of November 30 is anticipated. The project is estimated to cost $750,000 and will provide a four-lane road from Oregon City to New Era.

First Avenue-Esplanade Street Project: Another large project is the First Avenue-Esplanade Street Section of the Klamath Falls-Malin Highway in Klamath Falls. This is the first unit of an ultimate by-pass route through the east portion of Klamath Falls. This route leaves The Dalles-California Highway immediately north of the north city limits of Klamath Falls and follows thence south along the easterly side of the Southern Pacific Railroad, and the main canal of the U. S. Reclamation Service to the city's business district. Ultimately, a connection will be made with the Klamath Falls-Lakeview Highway a short distance east of the Klamath County Fair Grounds. The unit under contract is expected to cost $403,000 and is to be completed by June 30, 1949.

General Comments

During the biennium, the Construction Department has been materially handicapped by a lack of sufficiently trained engineering personnel. An excessive turnover of men, particularly in the lower salary brackets, has necessitated continual training of new men at times when all available personnel was needed to handle the construction work. For this reason, it has been impossible to proceed with location surveys and other planning activities as rapidly as desired. As a result, the backlog of project plans prepared during the war is now practically exhausted and difficulty is being experienced in keeping the preparation of plans in pace with contracting needs. For the past two years, the amount of contract work has been nearly triple the amount handled before the war, while the engineering crews have been operating with nearly ten per cent less personnel.

Rotary snow plow operating near summit of Cascades

Winter scene on Willamette Highway east of Oakridge

REPORT OF MAINTENANCE DEPARTMENT

E. A. COLLIER, *Maintenance Engineer*

Floods featured maintenance activities during the past two years and sharply increased costs. In June, 1947, flash floods after a thunder storm damaged the Sherman, Dalles-California and Columbia River Highways, caused one death and $850,000 damage to farms and roads. October, 1947, was the rainiest October in 58 years and highway damage was caused at Rufus, White River and elsewhere. In January, 1948, there were floods over the State causing damage, particularly to the South Umpqua River Bridge at Dillard where the foundation was undermined. Two Bailey bridges were erected to handle Pacific Highway traffic temporarily. Cost for detour, temporary bridge and permanent repairs will be $149,000. In February, floods damaged the Sherman and Dalles-California Highways and there followed for three months a succession of cloud bursts on the Ochoco and John Day Highways. Then in May, the Columbia River surged to its highest level since 1893, washing out the City of Vanport and the three highway routes north from Portland on Swift, Denver and Union Avenues, with highway damage running to a half million dollars.

The large increase in population, traffic and particularly log truck traffic, have made more maintenance work necessary. Serious damage to highway surfaces occurred in the Spring of 1948 on sections of the Siuslaw, Halsey-Brownsville and Coast Highway near Brookings subject to heavy log truck haul. Even so, the maintenance of the essential highway facilities has permitted the free flow of traffic with safety and the 700 foot washouts at Vanport were restored promptly. The area between Union and Denver Avenues should be dredge filled to insure continuous traffic flow on the Pacific Highway and this work would improve the Columbia River channel and provide an excellent industrial area.

There has been a 97 mile increase in the mileage of highways maintained, the total now being 7,268 miles. The number of maintenance employees in September, 1948, was 1,879 which is still four per cent less than in 1941 when the total was 1,946.

Work hours for section crews and shops are 44 per week and for extra gangs 48 per week.

Organization

The general maintenance work is performed by section crews, 140 in number, each under a section forman, working under the supervision of 17 District Maintenance Superintendents. These crews carry on their work from strategically located headquarters, making routine repairs, plowing snow, sanding slippery pavements, removing slides, fallen rocks, and trees, and patrolling their sections during stormy weather. They are alert at all times to give prompt attention to the needs of the roads and to the safeguarding of traffic. These foremen and Superintendents are the representatives of the Highway Department most often contacted by residents and travelers.

Extra gang crews for paving, oiling, bridge repair, sign installation, traffic line striping, et cetera, are organized independently of the section maintenance crews to perform their particular types of repair work.

The District Maintenance Superintendents organize and supervise the crews and equipment, order materials and supplies, and in general, handle all operations in their districts under the direction of the five Division Engineers.

In addition to the general maintenance work performed by state forces, special maintenance jobs, such as some reoiling of highways and repainting of major bridges, are done by contract. Crushed rock is purchased from commercial plants as needed, or produced by contract from noncommercial quarries and gravel pits. In 1947, the total quantity of rock so purchased or produced was 475,000 cubic yards.

Maintenance of Pavements and Bituminous Surfacings

Ten crews with portable paving plants mixed and placed 105,830 tons of asphaltic concrete in 1947 at a cost of $9.21 per ton. In 1948, the total will be 115,000 tons at a cost of $9.63 per ton. This type of hot asphaltic concrete patching has proved most effective on all types of surfaces, both for repair of breaks and for restoration of smooth riding quality. The crews were started out a little earlier on the average in 1948,

and their daily average tonnage was greater than in 1947. However, due to higher prices on asphalt, rock and labor, the unit cost per ton was higher by about four per cent than in 1947.

Five oil crews applied 3,455,120 gallons of asphaltic road oil in 1947 and 3,364,000 in 1948.

Unit Oiling Costs for 1947

Work		Total Cost		Material Cost	
Specification	Miles	Per Mile	Per Sq. Yd.	Rock Cu. Yd.	Oil Per Ton
O-31	79	$ 693	$ 0.06	$ 1.54	$ 19.01
O-31	223	1,100	0.09	2.45	21.01
DO-30	312	1,443	0.12	2.16	19.80
O-9	48	2,567	0.22	2.11	20.23
O-11	10	4,273	0.36	2.13	20.10

Oil costs shown are costs at points of unloading.

Cost of rock for O-31 appears low because 40% was screen rejection material of little or no cost.

Costs per mile have been adjusted to 20-foot width.

Average cost percentages: For labor, 26%; asphalt, 29%; rock, 30%; equipment and supplies, 15%.

Bridge Maintenance

The two most important items in traffic service are smooth highway surfaces and safe bridges. The maintenance of some 2,400 bridges was performed by 17 extra gang bridge crews. Painting of the larger steel spans was performed by contract.

The State contracts the operation of two free ferries at Wilsonville and Enegren. The Astoria-Megler Ferry was purchased by the State in 1946 and operates as a toll ferry with rates designed to pay cost of operation and depreciation. A 44-car steel ferry boat, christened the "M. R. Chessman," was built in 1947 at a cost of $473,294 to provide better service. This makes three ferry boats available at this important river crossing as the pioneer ferry boat, North Beach, was retired.

Maintenance of Buildings

The State owns five division headquarters buildings, 12 district buildings, 99 section buildings, four equipment repair shops, 50 truck scales and scale houses, and many park build-

ings. The maintenance of these buildings is performed by bridge crew extra gangs.

The State also rents 29 section maintenance buildings, the majority of which are inadequate. Plans have been prepared for the construction of a number of new maintenance buildings, and sites on which to construct them have been purchased.

Slides

Slides are one of the major maintenance problems, particularly on newly constructed sections. These movements of earth and rock are generally caused by water seeping on or above an inclined impervious strata and thus reducing the coefficient of friction to the point of instability. During location and construction, effort is made to provide adequate drainage facilities and to avoid conditions favorable to slides, but complete avoidance of slides is impossible. Slide areas are investigated by test shafts and test borings and are drained to prevent their movement.

At the big slide east of Multnomah Falls, the steep slopes have been reshaped, some drainage has been installed and a large yardage of slide material removed. No trouble has been

The new M. R. Chessman ferry boat constructed for the Astoria-Megler Ferry service.

experienced there during the past two years. In the Siskiyous, movement continues on several large slides.

On the South Santiam, the Sheep Creek slide, involving several hundred acres and a quarter-mile of highway, is still active. This slide buckles the Sheep Creek Bridge and the pressure has to be released and bridge repaired at intervals of about six months.

Signs, Signals and Traffic Lines

The work of installing and maintaining signs and signals and the painting of traffic lines is performed by state crews under the supervision of an Assistance Maintenance Engineer. The yellow traffic stripe down the center of the highway is very popular with motorists and very important for traffic safety. Four striping crews were operating during 1948.

Equipment

The Maintenance Department furnishes and repairs all highway department equipment. Rent is charged on each piece to cover depreciation, repair, and maintenance. Repairs are made at four shops located at Salem, La Grande, Klamath Falls, and Coquille. Each shop is in charge of a Superintendent under the direction of the Equipment Superintendent at Salem. Supplies and parts are purchased, stored, and dispensed by the storerooms operated in connection with the four shops.

During the war years it was necessary to prolong the life of trucks and other equipment by extensive overhauling and repairs. During past two years, about 1½ million dollars worth of equipment has been bought and it is planned to add another million dollars worth in order to retire the older equipment which has outlived its usefulness. The biggest loss in the use of old equipment is not the cost of repairs or the lack of efficiency, but the delay from breakdowns on the job.

Cost Statements

Itemized statements, showing the "per mile" cost of maintenance for both the primary and secondary systems during each of the calendar years 1946 and 1947 and showing the numbers of miles of highway maintained, appear in accompanying tables.

TABLE XVI

Costs of Maintaining Primary State Highways
Calendar Year 1946

Kind of Work	General Maintenance	Special Maintenance	Total Maintenance	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 105,901.69	$	$ 105,901.69	332	$ 319
Asphaltic pavement repairs	277,544.89	32,330.27	309,875.11	540	574
Bituminous macadam repairs	550,950.47	.....	550,950.47	1,230	448
Oiled macadam repairs	1,319,216.49	17,463.49	1,336,679.98	2,310	579
Untreated and graded, repairs	67,361.63	.....	67,361.63	383	176
Base and sub-base repairs	14,979.10	.....	14,979.10	.....	.....
Shoulders					
Blade, patch, retreat	250,084.45	.....	250,084.45	.....	.....
Sidewalks, islands, curbs	7,864.63	.....	7,864.63	.....	.....
Drainage					
Ditches	225,420.85	1,443.84	226,864.69	.....	.....
Drainage tunnels	9,932.38	.....	9,932.38	.....	.....
Pipe culverts, siphons, flumes	45,529.88	.....	45,529.88	.....	.....
Structures					
Box culverts and bridges, 20 ft. and under in length	21,364.44	.....	21,364.44	.....	.....
Bridges longer than 20 feet	148,097.49	35,448.84	183,546.33	.....	.....
Guard fence and sight posts	56,475.29	.....	56,475.29	.....	.....
Tunnels, roadway	2,561.92	.....	2,561.92	.....	.....
Retaining walls, dikes, etc.	1,722.86	.....	1,722.86	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	260,131.99	.....	260,131.99	.....	.....
Landscaping	12,615.68	.....	12,615.68	.....	.....
Slides, roadbed and slopes	287,943.27	127,265.87	415,209.14	.....	.....
Right of way fence and markers, mileposts	2,593.64	.....	2,593.64	.....	.....
Road approaches	57,418.45	.....	57,418.45	.....	.....
Traffic Service					
Traffic signals	12,196.88	.....	12,196.88	.....	.....
Signs and highway markers	75,844.55	.....	75,844.55	.....	.....
Traffic lines	139,937.20	.....	139,937.20	.....	.....
Snow removal	249,359.26	.....	249,359.26	.....	.....
Sanding slippery pavement	114,547.77	.....	114,547.77	.....	.....
High water: Flag and stake	9,266.23	.....	9,266.23	.....	.....
Highway illumination	9,222.84	.....	9,222.84	.....	.....
Road magnet operation	4,097.12	.....	4,097.12	.....	.....
Sub-Total	$4,430,183.29	$ 213,952.31	$4,554,135.60	.....	.....
Maintenance superintendence	113,592.78	.....	113,592.78	.....	.....
Total	$4,453,776.07	$ 213,952.31	$4,667,728.38	4,795	$ 973

TABLE XVII

Costs of Maintaining Secondary State Highways
Calendar Year 1946

Kind of Work	General Maintenance	Special Maintenance	Total Maintenance	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 5,901.85	$	$ 5,901.85	46	$ 128
Asphaltic pavement repairs	51,427.59	.....	51,427.59	141	365
Bituminous macadam repairs	13,832.73	.....	13,832.73	52	266
Oiled macadam repairs	462,016.78	59,472.73	521,489.51	1,102	473
Untreated and graded, repairs	254,564.79	.....	254,564.79	1,033	246
Base and sub-base repairs	10,973.73	.....	10,973.73	.....	.....
Shoulders					
Blade, patch, retreat	42,390.90	.....	42,390.90	.....	.....
Sidewalks, islands, curbs	701.47	.....	701.47	.....	.....
Drainage					
Ditches	74,825.44	.....	74,825.44	.....	.....
Drainage tunnels	4,590.65	.....	4,590.65	.....	.....
Pipe culverts, siphons, flumes	27,809.64	.....	27,809.64	.....	.....
Structures					
Box culverts and bridges, 20 ft. and under in length	15,382.95	.....	15,382.95	.....	.....
Bridges longer than 20 feet	67,997.05	18,172.48	86,169.53	.....	.....
Guard fence and sight posts	4,304.05	.....	4,304.05	.....	.....
Tunnels, roadway	.....	.....	.....	.....	.....
Retaining walls, dikes, etc.	483.67	.....	483.67	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	75,343.09	.....	75,343.09	.....	.....
Landscaping	237.33	.....	237.33	.....	.....
Slides, roadbed and slopes	54,447.14	.....	54,447.14	.....	.....
Right of way fence and markers, mileposts	745.99	.....	745.99	.....	.....
Road approaches	11,060.97	.....	11,060.97	.....	.....
Traffic Service					
Traffic signals	576.81	.....	576.81	.....	.....
Signs and highway markers	16,902.10	.....	16,902.10	.....	.....
Traffic lines	19,414.50	.....	19,414.50	.....	.....
Snow removal	52,856.34	.....	52,856.34	.....	.....
Sanding slippery pavement	5,628.45	.....	5,628.45	.....	.....
High water: Flag and stake	3,654.25	.....	3,654.25	.....	.....
Highway illumination	247.03	.....	247.03	.....	.....
Road magnet operation	1,401.13	.....	1,401.13	.....	.....
Sub-Total	$1,279,718.42	$ 77,645.21	$1,357,363.63	.....	.....
Maintenance superintendence	33,493.23	.....	33,493.23	.....	.....
Total	$1,313,211.65	$ 77,645.21	$1,390,856.86	2,374	$ 586

TABLE XVIII

Costs of Maintaining Primary State Highways
Calendar Year 1947

Kind of Work	General Maintenance	Special Maintenance	Total Maintenance	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 128,647.07	$	$ 128,647.07	343	$ 375
Asphaltic pavement repairs	331,023.74	1,704.52	322,728.26	558	596
Bituminous macadam repairs	602,821.02	74,718.48	677,539.50	1,222	554
Oiled macadam repairs	1,387,010.77	97,648.03	1,484,658.80	2,376	625
Untreated and graded, repairs	96,914.03	.....	96,914.03	308	315
Base and sub-base repairs	10,183.73	.....	10,183.73	.....	.....
Shoulders					
Blade, patch, retreat	311,146.57	.....	311,146.57	.....	.....
Sidewalks, islands, curbs	6,681.23	.....	6,681.23	.....	.....
Drainage					
Ditches	249,948.41	.....	249,948.41	.....	.....
Drainage tunnels	9,740.49	.....	9,740.49	.....	.....
Pipe culverts, siphons, flumes	51,105.28	.....	51,105.28	.....	.....
Structures					
Box culverts and bridges, 20 ft. and under in length	31,780.79	.....	31,780.79	.....	.....
Bridges longer than 20 feet	208,615.95	81,323.91	289,939.86	.....	.....
Guard fence and sight posts	94,199.75	.....	94,199.75	.....	.....
Tunnels, roadway	1,191.97	.....	1,191.97	.....	.....
Retaining walls, dikes, etc.	1,031.51	.....	1,031.51	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	290,688.27	.....	290,688.27	.....	.....
Landscaping	15,163.53	.....	15,163.53	.....	.....
Slides, roadbed and slopes	242,742.55	108,996.90	351,739.45	.....	.....
Right of way fence and markers, mileposts	2,429.41	.....	2,429.41	.....	.....
Road approaches	47,657.12	.....	47,657.12	.....	.....
Traffic Service					
Traffic signals	10,412.25	.....	10,412.25	.....	.....
Signs and highway markers	101,752.67	.....	101,752.67	.....	.....
Traffic lines	159,184.50	.....	159,184.50	.....	.....
Snow removal	190,436.71	.....	190,436.71	.....	.....
Sanding slippery pavement	148,737.31	.....	148,737.31	.....	.....
High water: Flag and stake	5,225.38	.....	5,225.38	.....	.....
Highway illumination	11,657.92	.....	11,657.92	.....	.....
Road magnet operation	4,118.12	.....	4,118.12	.....	.....
Sub-Total	$4,752,248.05	$ 364,391.84	$5,116,639.89	.....	.....
Maintenance superintendence	131,373.85	.....	131,373.85	.....	.....
Total	$4,883,621.90	$ 364,391.84	$5,248,013.74	4,807	$1,092

TABLE XIX

Costs of Maintaining Secondary State Highways
Calendar Year 1947

Kind of Work	General Maintenance	Special Maintenance	Total Maintenance	Miles Maintained	Cost Per Mile
Surface					
Concrete pavement repairs	$ 15,656.26	$	$ 15,656.26	50	$ 313
Asphaltic pavement repairs	70,545.74	.....	70,545.74	172	410
Bituminous macadam repairs	22,209.32	.....	22,209.32	66	337
Oiled macadam repairs	585,981.83	3,268.13	589,249.96	1,235	477
Untreated and graded, repairs	207,414.37	.....	207,414.37	874	237
Base and sub-base repairs	8,614.23	.....	8,614.23	.....	.....
Shoulders					
Blade, patch, retreat	64,028.66	.....	64,028.66	.....	.....
Sidewalks, islands, curbs	976.66	.....	976.66	.....	.....
Drainage					
Ditches	84,385.05	.....	84,385.05	.....	.....
Drainage tunnels	1,132.74	.....	1,132.74	.....	.....
Pipe culverts, siphons, flumes	23,124.76	.....	23,124.76	.....	.....
Structures					
Box culverts and bridges, 20 ft. and under in length	11,174.42	.....	11,174.42	.....	.....
Bridges longer than 20 feet	111,615.98	14,004.60	125,620.58	.....	.....
Guard fence and sight posts	10,187.12	.....	10,187.12	.....	.....
Tunnels, roadway	.....	.....	.....	.....	.....
Retaining walls, dikes, etc.	357.17	.....	357.17	.....	.....
Roadbed and Right of Way					
Remove weeds, brush and debris	76,694.57	.....	76,694.57	.....	.....
Landscaping	1,086.09	.....	1,086.09	.....	.....
Slides, roadbed and slopes	53,721.07	.....	53,721.07	.....	.....
Right of way fence and markers, mileposts	696.16	.....	696.16	.....	.....
Road approaches	14,812.17	.....	14,812.17	.....	.....
Traffic Service					
Traffic signals	1,210.06	.....	1,210.06	.....	.....
Signs and highway markers	27,914.44	.....	27,914.44	.....	.....
Traffic lines	33,497.55	.....	33,497.55	.....	.....
Snow removal	40,242.59	.....	40,242.59	.....	.....
Sanding slippery pavement	11,296.41	.....	11,296.41	.....	.....
High Water: Flag and stake	2,192.78	.....	2,192.78	.....	.....
Highway illumination	260.03	.....	260.03	.....	.....
Road magnet operation	2,072.30	.....	2,072.30	.....	.....
Sub-Total	$1,483,100.53	$ 17,272.73	$1,500,373.26	.....	.....
Maintenance superintendence	41,000.54	.....	41,000.54	.....	.....
Total	$1,524,101.07	$ 17,272.73	$1,541,373.80	2,397	$ 643

Spring Creek Bridge within Collier State Park on U. S. 97, Klamath County.

REPORT OF BRIDGE DEPARTMENT

G. S. PAXSON, *Bridge Engineer*

Bridge Department activities during the biennium have been concentrated on bringing to completion the bridge projects authorized in State and Federal Aid postwar construction programs. In addition, the work of designing, preparing specifications for, contracting, and supervising construction of highway department buildings, special maintenance projects, county bridges, street lighting projects, etc., have been carried on in the usual manner.

Ninety-nine contracts involving 177 structures of all types and classes, aggregating $5,259,846 in total cost, were handled. Ninety-five of the contracts, involving 173 structures in aggregate cost of $5,085,967, were for projects on the state highway system; three contracts for three structures in aggregate cost of $165,549, were for counties; and one project, costing $8,330, was for a city. The four projects mentioned above are those for which the Bridge Department actually prepared plans, specifications and contracts for the counties' or city's use in awarding contracts. In addition to the above, requests by counties and cities for technical assistance on bridge problems were fulfilled.

A breakdown of the various classes of work handled and structures built or under construction is as follows:

Number of Jobs	Type of Work	Estimated Cost
101	New culverts and bridges	$ 3,184,399
7	New highway-railroad grade separations	704,721
23	Bridges or culverts widened or extended	398,980
4	Buildings (all types)	72,354
15	Maintenance projects (includes painting of steel bridges)	281,601
16	Miscellaneous projects (retaining walls, dams, etc.)	135,142
7	New highway-highway grade separations	308,770
4	City and county bridges	173,879
177		$ 5,259,846

Principal projects contracted for during the biennium are as follows:

Independence Bridge. This is a new crossing of the Willamette River above the existing ferry crossing at Independence and is being built under cooperative agreement between the

State and Marion and Polk Counties, the State bearing one-half the cost and the two counties jointly bearing the other one-half. The structure consists of 863 feet of trestle approach on the Marion County shore, a main river crossing of 1,267 feet of steel plate girder spans ranging in length from 90 feet to 152 feet, and 84 feet of trestle approach on the Polk County shore, making a total length for the structure of 2,214 feet, all with 26-foot vehicular roadway and pedestrian walks 3′-6″ wide on each side.

A contract for the project was awarded April 30, 1948 to Macco Corporation of Clearwater, California, at a bid price of $845,900. Work was started on May 25, 1948. The contractor has made excellent progress on the job, working 24 hours a day, seven days a week, during the summer months. At the end of 1948, all of the piers, except one on the Polk County shore, are either complete or well above high-water line, and the piling for the trestle approach on the Marion County shore are practically all driven. Steel for the main river crossing spans is expected on the job in the spring of 1949. Completion date for the bridge is December 31, 1949.

Nine hundred-foot steel and concrete bridge over the Santiam River on the Pacific Highway north of Albany.

Sandy River Bridge near Troutdale. This is a new crossing of the Sandy River on the new water-grade route of the Columbia River Highway east of Troutdale. The structure is 770 feet in total length with a 30-foot vehicular roadway and a 3′-6″ pedestrian walkway on each side. The main river crossing consists of two at 122 feet and one at 160 feet plate girder spans. The westerly approach to the main river is one 50-foot reinforced concrete span, and the easterly approach consists of a series of concrete spans 316 feet in total length.

General Construction Company of Portland was awarded a contract in the amount of $334,260 for the work, December 31, 1947. Work started on the project on January 20, 1948, and has progressed steadily since that time except for a three-months delay occasioned by the early summer flood of the Columbia River which backed into the Sandy River causing high water at the bridge site. Work on the project is approximately 50 per cent complete at the close of 1948, and it is expected that all work will be completed by March 31, 1949.

Bridal Veil Overcrossing. This structure is another link in the water-grade route of the Columbia River Highway. It

Stillwell Bridge over Trask River on Netarts Secondary Highway west of Tillamook.

provides an overcrossing of the main line Union Pacific tracks and the Columbia River Highway for traffic to and from Bridal Veil and vicinity. Guy F. Atkinson Company of Portland and San Francisco was awarded a contract in the amount of $317,400 on April 22, 1947. Construction was completed in July, 1948.

The activities of the Bridge Department during the biennium have been under the direction of G. S. Paxson as Bridge Engineer, with M. Stephenson, E. G. Ricketts, O. A. Chase, and W. A. Reeves as principal assistants. The present design and office force consists of 20 structural designers, draftsmen and general office help. The field force consists of 21 resident bridge engineers and structural inspectors and a foundation investigation crew of two men.

Split traffic circle and other control features on S. W. Barbur Boulevard at the crossing of Terwilliger on U. S. 99W in S. W. Portland.

REPORT OF TRAFFIC ENGINEERING DIVISION

F. B. CRANDALL, *Traffic Engineer*

During the past biennium effort has been made to improve the operational efficiency of the Traffic Engineering Division to handle a seemingly ever-increasing volume of work. It is felt that progress has been made in development of a sound working organization notwithstanding difficulties still being experienced as regards employment and training of personnel in this somewhat specialized field, and the retention of such personnel.

The Traffic Engineering Division has continued to operate with the two major subdivision breakdowns: namely, Traffic Control and Planning Survey. The Traffic Control section treats of the short-range problems with the Planning Survey concerning itself with collection of statistical data necessary to long-range considerations as well as supplying a source of basic data used in Traffic Control work.

The functional goal of the Traffic Engineering Division is the constant striving for those conditions which will make for the safe and expedient movement of traffic over the highway system. In working towards such objective there are two factions of the public who must be considered; namely, those who tend to stress the safety factor as opposed to those who tend to sacrifice safety to a certain degree in order that traffic may move at a faster pace. With the dynamic forces inherent to vehicular traffic, there will always be a certain degree of friction as a consequence of which the optimum safety index—accidents, zero—will never be realized. Effort is made to keep a finger on the pulse of the motoring public in determining degree of compromise desired as between the two extremes.

Traffic Control

All problems and assignments coming to the Traffic Control section are made the subject of analysis and final recommendation in accord with the scope or seriousness of the particular problem. In any case, all of the factual "tools" available to the Traffic Engineer and pertinent to the particular problem are brought to bear in order that the end result

will be a recommendation based on tangible facts rather than being solely a matter of opinion.

The traffic accident report is one of the basic sources of information used in treatment of the traffic problem. The complete analysis of traffic accidents is important not only from the value that may be derived from mass statistics, but also the bearing which such information may have on small unit studies and investigations looking to proper control measures or treatment of a particular location. The Secretary of State's office is, by law, the prescribed repository for accident reports. Through long-standing arrangement, however, between the Secretary of State's office and the Traffic Engineering Division, the latter has been permitted use of the reports for a sufficient period to make an analysis thereof through codification and transferring of accident data to Hollerith punch cards. The transference of data to the punch cards and subsequent manipulation through the medium of International Business Machine equipment permits quick compilation of statistical summaries and such special factual correlations as may be required.

The use of accident data as compiled in the Traffic Division is by no means restricted to this particular Division. Regular statistical reports are furnished the Secretary of State in the form of monthly, quarterly, semi-annual and annual summaries for use of that office in its safety education activities. Similar service is afforded the City of Portland, such service being reimbursable on a cost basis. Any request for accident information on the part of the counties or cities other than Portland are fulfilled with no charge.

As an indication of the volume of work handled in accident analysis, it may be stated that during the two-year period, July 1, 1946, to June 30, 1948, there was a total of 126,363 reported accidents. This compares with a total of 88,968 reported accidents for the two-year period immediately preceding: July 1, 1944, to June 30, 1946. In the processing of 126,363 reported accidents some 269,000 Hollerith punch cards were prepared.

In treating of the many requests for traffic signal installations which are directed to the Traffic Division two things are considered in making investigation and final recommenda-

tion: (1) Warrant for signalization in the first instance and (2) presuming warrant is indicated, the determination of priority when considered in the light of other needed installations. As regards basic need for signalized control, warrants for signalization as prescribed in the National Manual of Uniform Traffic Control Devices are adhered to. The principles as set down in the afore-mentioned Manual are the result of best available national thinking in the field, and warrants are prescribed in some detail with respect to vehicular and pedestrian volumes, accident experience, etc. The second item of consideration; namely, priority considering the state as a whole, is determined through comparison of composite warrant as between potential signal projects over the entire state highway net.

During the biennium, signal investigations were made for 58 intersections involving some 23 cities or communities. Plans were approved for signalization of some 20 intersections. In addition, investigations were made for flashing beacon installations at some 40 locations with plans approved for 20 such installations.

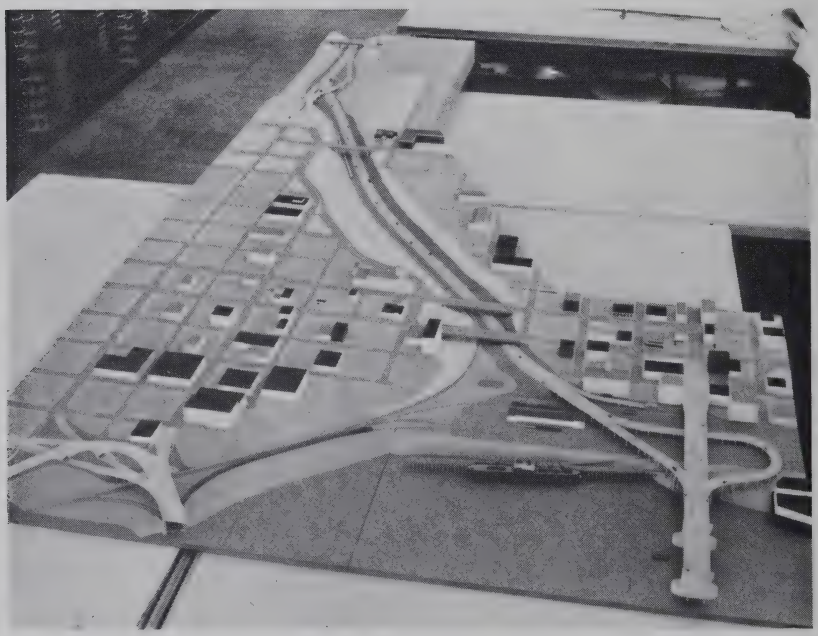
Engineering investigation with respect to speed zones is a function of the Traffic Engineering Division. Such investigations and recommendations are performed for both agencies having jurisdiction with respect to speed zoning; namely, the State Highway Commission and the State Speed Control Board. Speed zone investigations during the biennium involved some 140 miles of streets and highways.

The Highway Department cooperates with the office of the Secretary of State in organization and establishment of school boy patrols. If circumstances are such as to warrant establishment of a patrol the Highway Department supplies the necessary equipment—yellow helmets, Sam Brown belts, portable signs, and in addition furnishes a manual of instructions which sets forth proper organizational procedures and conduct of the patrol. During the biennium some 25 field investigations were made of which 10 were accorded favorable recommendation and patrols were organized.

The Traffic Division has continued to work closely with personnel of the Construction Division in order that projected highway improvements may incorporate the utmost in safety

and ease of movement. The Traffic Division endeavors to keep in close touch with critical situations which may arise from time to time, review accident statistics and other pertinent factors, and initiate appropriate measures in the form of minor channelization, signing, signalization, or whatever remedial measures may seem in order. During the past biennium and in the field of geometric design, considerable time and effort has been directed towards construction of scale models of proposed highway improvements which have proven of value in pointing out errors of design as well as affording a medium of public education and understanding of projected new facilities. Models of some 11 projects have been made during the biennium, ranging in size from such extensive facilities as Sullivan Gulch project in Portland to lesser intersectional channelization improvements.

Considerable time and effort have been devoted to preparation of "before" and "after" studies with respect to various



Models are constructed of intricate highway designs. This shows a portion of the proposed Sullivan Gulch project in East Portland.

traffic control treatments which were instituted. This type of study serves a two-fold purpose: (1) Affords a check or measure of the efficacy of a particular treatment and thereby adds to the store of knowledge and experience which serves as a basis or guide in the treatment of future problems which may arise and which may be susceptible of similar treatment, and (2) a realistic picturization for use in public relations work. Actual case studies of particular types of treatment which have shown beneficial results are one of the most cogent talking points a Traffic Engineer has in promoting and winning approval of the public. The use of such reports does much to resolve diversity of laymen opinion and give factual aspect to a particular problem.

Mention has been made of the use of International Business Machine equipment in connection with accident analysis. This type of machine equipment is particularly adapted to the treatment and analysis of large masses of statistics of such nature that manual summarization would be impractical and even impossible. Over and above use made of this equipment in connection with accident analysis work, such projects as origin-destination studies, time studies, parking studies, truck weight tabulations, and similar work involving multiplicity of data are analyzed through medium of mechanical summarization. During the latter part of the biennium extensive use was made of the International Business Machine equipment in the punching, processing, and tabulating of data relative to the Highway Needs Study of the Legislative Interim Committee for the Study of Highway, Road and Street Needs, Revenue and Taxation.

As an indication of the volume of work handled by I. B. M. equipment and personnel, during the biennium some 725,000 individual cards were punched. In addition, there were some 830,000 cards reproduced in instances where duplicate sets were required. For all operations inclusive of accident analysis, truck weight data, Portland Origin and Destination and Parking Survey, miscellaneous time studies, Highway Needs Study, and sundry lesser projects, a total of some 672 tabulations and listings were prepared.

Planning Survey

The Planning Survey has been continued as a subdivision unit within the Traffic Engineering Division. Such organizational positioning has always seemed a logical one from the standpoint of function as well as the fact that this is the phase of operations wherein operational monies are comprised of state and federal funds, it being a field of particular interest to the Public Roads Administration. The Planning Survey operations are primarily concerned with basic data and statistics in the development of a long-range program looking to properly integrated transport system which will serve present needs as well as adapting to a long-range master plan. Over and above the furnishing of basic data in connection with long-range planning this phase of operations is a ready source of information pertinent to treatment of short-range everyday problems which in the first instance fall in the Traffic Control category.

One of the major activities of the Planning Section is maintenance of scheduled state-wide traffic audits. Throughout the biennium regularly scheduled counts have been carried on at 106 stations over the rural highway system. This same general schedule of traffic audits has been maintained throughout the years since the time of the comprehensive state-wide traffic survey which was made in 1936-37. This sustained record of traffic audits affords information for development of long-range trends of vehicular traffic as well as providing a source of information for factoring and adjustment of short-term counts taken at other locations on the road system. Data with respect to these regularly scheduled counts are published yearly and are available for general distribution. Over and above regularly scheduled counts, approximately 200 special traffic audits were made during the biennium.

During 1946 the traffic counting schedule was expanded to include 38 urban stations in 32 cities. There are five of these stations in Portland, two stations in Medford, two stations in Pendleton and one in each of 20 other cities. As in the case of the rural program, the information obtained from these counts serves as a basis of adjustment of short-term counts in the urban areas.

In addition to the manual counts, the Division maintains five permanent automatic traffic recorders. These recorders have been in operation since 1937. The data obtained from this source serves as a basis of computing monthly and seasonal variation factors.

In January, 1948 a cyclic schedule of portable automatic recorder counts was instigated wherein two recording type portable automatic recorders would be used to obtain continuous counts for a week's period out of each month at eight selected locations. These eight locations were selected with the thought in mind that at a future date permanent type recorders could be installed to further increase coverage of the state with continuous automatic recorder counts. Since January, 1948, approximately 850 twenty-four hour counts were obtained on the Primary and Secondary system through the medium of portable non-recording type automatic counters.

The road inventory work, as in the case of other phases of the Planning Survey, has been reactivated on a scale such that within a five-year period the entire state will be re-inventoried. Such provides a record of the physical features of all public roads and highways in rural areas of the state. The shortage of transportation equipment has limited the activities of the field parties. However, it is hoped that in the coming biennium it will be possible to maintain the five year cyclic schedule. A total of some 4,400 miles of public highways have been inventoried to date.

The city street inventory is being conducted in conjunction with the rural road inventory and data are being obtained on all streets in incorporated cities in the counties mentioned previously. Such data are to be used in revising the city street surface maps and for studies of street usage and types.

The data obtained from inventory surveys, both rural state-wide and city are a source of information needed for preparation of detailed county and city maps. These maps have had wide-spread distribution with respect to federal, state, and county and city agencies, as well as private concerns. During World War II there was a heavy drain on the stock of maps on the part of the Armed Forces. In view of this past experience every effort is being made to bring the maps up to date and to maintain an ample stock thereof in order that

the department may be fully prepared for any future emergencies.

A companion to the road and street inventory work is the bridge inventory. This work is handled by personnel of the Bridge Department with the funds therefor derived from Planning Survey monies. The purpose of the bridge inventory work is to keep up-to-date records of bridge structures on all public ways, not only as regards their location and general type, but detailed information as to length of span, vertical and horizontal clearances, and detailed construction features. Personnel limitations have precluded the extensive development of bridge inventory work. Therefore, little progress has been made in the biennium.

A very comprehensive origin-destination and parking survey in the City of Portland was conducted and completed this biennium. This project was launched as a cooperative undertaking with the City of Portland, the Public Roads Administration, and the State participating. The fact that the City of Portland is the focal point of the larger traffic volumes, it follows that the greatest need and a great portion of the attention of the Department center in this area. The intelligent planning of traffic facilities in and around Portland requires reasonably accurate information as to the desire for movement as well as terminal facilities. Information which will come out of the survey will supply this essential information.

Throughout the last half of the biennium, cooperative work was carried on in connection with the Highway Needs Study of the Legislative Interim Committee. In connection with the Highway Needs Study the Planning Survey Engineer devoted practically 100 per cent of his time to the work with the majority of technical personnel under his supervision also devoting the major portion of their time to the work.

In summarizing the work of the Traffic Engineering Division it may be stated that continued effort has been directed towards investigation and prescribing of short term pallative betterment work as well as giving thought to long-range aspects looking to proper development of highway system as will serve the needs of the future.

REPORT OF MATERIALS DEPARTMENT

N. M. FINKBINER, *Engineer of Materials*

The Materials Department has as its principal function the making of examinations and tests on materials used in the construction and maintenance of roads and bridges. The laboratories and main office are situated at 2900 State Street, in Salem. A branch office is maintained in the Division Office Building in Portland. Inspectors from the Portland office sample and check those materials and products which originate in the metropolitan district.

Materials examined and subjected to laboratory tests are the following: bituminous materials (asphaltic cements, cutbacks, emulsions and tars), bituminous mixtures, buttons and backgrounds used in reflectorized signs, Portland cement, concrete cylinders, creosote, expansion joint fillers, ferrous and nonferrous metals and alloys, gravel, guard rails (wood, steel and cable), lumber and piling (green and treated), mineral filler, lubricating oils, paints and lacquers and their ingredients, culvert pipe (concrete and iron), rock, sand, and soils. Tests are run according to the methods of the American Association of State Highway Officials, and/or The American Society for Testing Materials. From the results of these tests, the Engineer of Materials passes upon their suitability. Thirty-one thousand samples were received at the laboratory and tested during this biennium.

The Materials Department designs, in the laboratory, all "mixes" (concrete and bituminous) used in the field, and is responsible for their use. To insure nondeviation of mixes in the field, inspectors and checkers are maintained at all bituminous paving plants and hydraulic cement batching plants, when in operation on State highway contracts.

The laboratory research section of the Department has, during this biennium, completed its investigations of the hardening of asphaltic cements in service. Its report on these investigations has been published in the 1947 Proceedings of the Highway Research Board. Some work has been done on the efficacy of curing compounds for hydraulic cement concrete and a report on this subject will appear in the near future. The laboratory research section also designed, installed and operated

the electrical equipment used in the weighing and strain measuring of the Oneonta Bridge deck. Other work done included a comprehensive investigation of the beam-type guard-rail. A progress report on this investigation was made to the Western Association of State Highway Officials at its 1948 meeting in Portland.

G. W. Harra is Assistant Engineer of Materials, O. A. White is Laboratory Research Engineer, and C. F. Hagemann is Office Engineer.

A section of the Steiwer Hill-Albany Project on U. S. 99E in Marion County.

REPORT OF LEGAL AND RIGHT OF WAY DEPARTMENT

J. M. DEVERS, *Chief Counsel*

Another two-year period of highway activities is drawing to a close and again the Commission, in response to the call of the statute prescribing its powers and duties, is required to report to the Chief Executive of the State, in which report there shall be set out the work accomplished during the said biennial period, the revenues received by the Commission and the disbursements of such revenues, together with such general information as may appear desirable regarding the construction, improvement and maintenance of highways and bridges, along with such other information or data as may be deemed pertinent and proper. The Highway Code provides for the appointment by the Commission of a Chief Counsel and assistants, who are charged with all of the legal work and the Chief Counsel is also made responsible for the acquisition of all real property.

These two functions of the Highway Department are recognized as the Legal and Right of Way Department. The personnel is composed of J. M. Devers, Chief Counsel; G. W. Neuner, J. W. DeSouza and C. W. Enfield, Assistant Counsels; G. E. Rohde, Assistant Attorney; R. L. Byrum, Title Abstractor; A. B. Kneass, Real Property Supervisor; Albert R. Benfield, H. G. Benson, J. R. Boone, W. F. Collins, R. W. Cozad, C. L. Gardiner, W. H. Haskin, Ray Landon, S. N. Mayhew, M. D. McCallister, W. S. McChesney, D. L. Norlin, C. W. Parker, H. B. Reeder and W. H. Witt, Right of Way Agents; and Earl Saling, E. J. Benner, W. J. Minkiewitz, Florence Carter, Alta Vivian Hester, Norma Hardy, Cecile Knox, Birdie Reese, Hazel Simmons, Ruby Wiederkehr, Pauline Welch and Lucille Hoffert.

In addition to all of the regular duties of the Chief Counsel to a governmental agency such as the Highway Department, during the biennium the following specific things have been done: Forty abandonment agreements, thirty-two abandonment resolutions, 205 miscellaneous agreements and numerous resolutions have been prepared. The Chief Counsel has examined and approved 263 construction contracts. Fifty-nine condemnation actions have been instituted during the biennium, twenty-six of which were settled and thirty-three of which are

still pending. Out of forty condemnation actions which have been instituted prior to July 1, 1946, seventeen have been settled. Several miscellaneous court actions were also handled during the biennium.

The following real property transactions have been negotiated:

Use	Number of Parcels	Cost
Right of Way	1,324	$1,576,445.25
Quarry and Gravel Pit	60	42,925.64
Stockpile Sites	30	5,310.81
Miscellaneous Sites	10	259,537.49
Parks	26	87,645.03

The 1947 legislature by the enactment of several new statutes invested the Commission with additional powers and imposed on it additional duties. For instance, the legislature has enacted laws covering the use of the shore of the ocean for the driving of automobiles, the landing of aircraft, and the removal of sand and dumping of debris and a number of other items and has charged the Commission with the enforcement of those statutes.

The major law enacted by the 1947 legislature was what is known as the "throughway" law. By this law the Commission is authorized to acquire and control all right of access to such state highways as may be declared by the Commission to be throughways. Following the mandate of the legislature in that respect the Commission has adopted a resolution by which it has designated certain highways as throughways and has directed that when they are improved or realigned in any major respect such work shall be accomplished in such manner as to make of said highways access controlled highways or throughways.

The 1947 legislature provided for an Interim Committee charged with a study of the highways, including county roads and city streets, of the State, which study was to include necessary funds with which to conform said highways and streets to present needs. It is anticipated that the report of that committee when filed with the legislature will call for the preparation of additional bills, both with respect to the manner and extent of improvement and the funds with which to accomplish those improvements. This work in a large measure will fall on the Commission's legal staff.

REPORT OF STATE PARKS DEPARTMENT

SAMUEL H. BOARDMAN, *State Parks Superintendent*

The second year of this biennium has been a quite notable one in state park history in the accomplishment of improvements and betterments which had been delayed or postponed because of the shortages of materials and labor that had continued on down to and through 1947. While planned betterments and improvements were not fully achieved, marked progress was made in restoring deteriorated land surface improvements and in renovating existing structural betterments, particularly in improving and modernizing the living quarters of caretakers. One entirely new caretaker's house, and one from salvaged materials were built in 1948.

More and better parking places were provided at many parks, park trails were improved by better drainage; decaying wood protection rails were replaced with concrete, dry stone walls, or rock masonry where imperative. New fog posts were set, roadways and parking places were better defined by the placement of heavy stones. New picnic tables were set up and fire rings were built in several parks for visitor needs and comfort throughout the park system.

A new and notable addition to the state park system early in this biennium was an area of 118 acres in Wallowa County. The tract is situated at the base of the highly attractive and picturesque Wallowa Mountains, where touched by the beautiful Wallowa Lake, considered by informed geologists as being in its scenic and geological significance, second only to Oregon's peerless Crater Lake.

Also in this period the long pending transfer of the Silver Creek Recreational Demonstration Project area from the Department of the Interior, by and through the National Park Service, was finally consummated. This new area of 6,000 more or less acres adjoins the Silver Falls State Park on the south side, and is now included with it as a single administrative unit. The area has for a number of years been a popular, well conducted camp for both boys and girls youth organizations since its opening, and accommodations have usually been booked ahead by various groups for the entire season. While

Boats are available to the Public through a state-controlled concession within Sunset Bay State Park near Charleston in Coos County.

in some disrepair, the facilities are deemed adequate for present requirements.

In 1947 eighteen tracts of land were acquired. Ten with a total area of 203.43 acres were additions to existing parks. Others with an area of 547.52 acres were new areas. In 1948, 444.35 acres were additions to existing parks and 4.85 acres were Myrtle agreements. One addition of 112.80 acres to Ecola Park was a gift from Clatsop County. New areas totaled 70.54 acres, 48.00 acres of which were a gift from Coos County. Flounce Rock, a Jackson County Forest Wayside of 320 acres, formerly under lease from the Department of Interior, was also purchased during the biennium.

Other new selections for purchase have been made, and desirable Federal lands for park additions have been chosen. The plans for these prospective acquisitions were frustrated for this year, by reason of technicalities that affected the transfer of lands suitable for necessary exchange purposes, and possible transfers of title for other lands were delayed beyond the date for which allotted budget funds were available.

The Collier Memorial State Park, containing one hundred forty-six acres, is situated in Klamath County, thirty miles north of the City of Klamath Falls, on the new, recently opened Diamond Lake Junction-Lobert Section of The Dalles-California Highway. The park area, deeded directly to the state, on December 26, 1945, by its former owners, Claudia L. Lorenz and William M. Lorenz, her husband, was paid for by Alfred D. Collier and Andrew M. Collier, and presented to the State of Oregon as a memorial to their parents who had a fondness for the area. To their memory a native stone monument was erected on the right bank of Spring Creek, a short distance below the highway bridge crossing. The park is unique in being the only state park in Oregon within the bounds of an Indian Reservation.

The donors of the park, long identified with the development and progress of Klamath County, are particularly interested in collecting and housing in the park, a museum exhibit, featuring the crude logging camp type of buildings, for housing the kinds of equipment and tools used by the early pine timber loggers in this region. The only other like exhibit is in Wisconsin, where its novelty has attracted many interested visitors.

These public spirited Collier brothers, at their own expense, will acquire the obsolete equipment, tools and culinary utensils used in early days of the logging industry, and house it in reproductions of the crude type of camp buildings, which were progressively and haphazardly set up as camp needs developed. They also contributed to the cost of the new caretaker's cottage.

Improvements in the newly acquired Wallowa Lake Park were initiated in 1947 with the appointment of a caretaker, who immediately began a general cleanup, the improvement of roads and trails, the demolition of old buildings and disposition of pony corrals. The late and abnormally wet spring season of 1948, raised the impounded waters of the lake to unusual heights, surrounding the caretaker's house nearly to floor level, and rapidly melting mountain snow overflowed the low banks of the Wallowa River spreading over the low portions of the park but, fortunately, only minor damage resulted. The impounded lake waters are used for irrigation and the lake surface lowers continually as soon as the irrigation service begins. Heretofore this created a boat landing problem. The parks department overcame this by dredging a channel into a gently sloping park waterfront, of sufficient size and depth to accommodate a landing float and boats at any normal stage of water. An improvement that meets with the approval of all boat users.

An advance was made in Oregon state park history, when early in 1947 a coffee shop was opened in Silver Falls State Park, and when later in the season, the same concessionaire opened the lodge dining room. Both have proved to be popular park features. To the average family the coffee shop supplies a long felt want. The more pretentious lodge dining room with its beautiful, hand made Oregon Myrtle wood furniture, is an attraction that invites park visitors and pleases its guests.

The Silver Falls park area, although off any main route of travel, still lives up to the traditions of its past sixty years or more in entertaining outdoor pleasure seekers. Situated within an automobile hour or two of half of Oregon's population, this park maintains its outstanding popularity, with a consistent, postwar, year to year increase of visitors. With the rapidly increasing population of its easily reachable surroundings, both the old park and its component Recreational

Demonstration Project area, are in combination inevitably assured of a continually increasing usage.

A new park feature for the convenience of visitors, and in the interest of economy, first introduced in Champoeg State Park in 1947, was the erection of a roofed, open sided kitchen, equipped with a water heater and metered electric stoves for cooking; instead of using wood which had progressively become more and more expensive and difficult to obtain. This convenient change met with immediate public approval.

The previous biennium marked a definite upswing in the number of persons who visited Oregon's state parks in that period, and additional numbers were recorded in state-wide parks during 1947. The 1948 attendance records indicate a moderate decline in visitor numbers. This is definitely attributable to the unusually late, unseasonable weather that prevailed throughout the Pacific Northwest, culminating in the most destructive floods that ever visited the region; affecting the economies of all agencies identified with tourist or recreation activities. Following is a three-year comparison of attendance records:

	Number Persons
1946	
State-wide parks	1,161,027
1947	
State-wide parks	2,024,166
Lincoln County	830,154
Silver Falls	176,944
1948	
State-wide parks	2,068,393
Lincoln County	726,824
Silver Falls	139,013

Sunset along the Oregon Coast Highway

REPORT OF TRAVEL INFORMATION DEPARTMENT

MANLEY F. ROBISON, *Director*

Immediately following the end of hostilities of World War II, and the relaxation of wartime restrictions, a veritable dam of vacation travel burst loose in all parts of the United States. This impetus carried over into 1947, bringing Oregon her greatest travel year on record. During 1948, a leveling off was perceptible. This was attributed to the high cost of living pinch and to the detrimental effects of the widely publicized Columbia River flood disaster.

The department has consistently carried on an aggressive advertising and publicity campaign designed to attract vacationers to Oregon's superb scenic and recreational areas. In response to advertisements in national mass media magazines and newspapers, more than 250,000 inquiries on Oregon were received and processed by the department during the biennium.

In addition to the thousands of vacationers who came to Oregon by rail, bus and air during 1947 and 1948, a million and a quarter privately owned out-of-state automobiles carried more than three and one-half million people into the Beaver state on vacation trips. The average length of stay per person was 7.1 days. Cash expenditures per visitor averaged $42.55 in 1947 and $37.99 in 1948.

The estimated cash value of tourist travel in Oregon in 1935, when the Travel Information Department was established, was 25 million dollars annually. The income increased to 51 million dollars in the peak prewar year of 1941. It reached a record high of 105 million dollars in 1947 and registered an estimated 92 million in 1948.

In a move to enhance Oregon's reputation as a friendly and hospitable state, the department has joined each spring with the Oregon Advertising Club and the major chambers of commerce of the state in a program of tourist host schools. Managers and employees from service stations, hotels, motels, restaurants and other mercantile establishments, whose staffs come in contact with the traveling public, were invited to attend a series of meetings sponsored by chambers of commerce in some twenty population centers of the state. Speakers who addressed school sessions endeavored to impress upon those

in attendance the value of the tourist industry to their community and their state. Emphasis was placed on the scenic and recreational assets of the community and state and on the need for clean, comfortable accommodations; good food; adequate and accurate information and the desirability of pleasant, courteous treatment to visitors.

In addition to the display advertising schedule carried in magazines and newspapers, the department employs colored motion pictures, travel shows and brochures to carry the story of Oregon's vacation lures to more thousands.

Two colored films with sound, "The New Oregon Trail" and "Glimpses of Oregon State Parks," are made available to schools and organizations of the nation. A total of fifty prints of the two motion pictures are kept in constant circulation. They reach an audience of approximately one million people annually. "The New Oregon Trail" is frequently televised by eastern stations.

Through the cooperation of the Pacific Northwest Travel Association, Oregon enjoys representation in a series of travel shows sponsored by major newspapers of the middle west. In 1948, exhibits were conducted at the travel and sports shows at Oakland and Los Angeles, as well as at the Chicago Railroad Fair. Participation in events of this nature provides Oregon representatives an opportunity to discuss the recreational advantages of the state with the prospective visitor and to place descriptive literature in his hands.

During the biennium, the department has produced and distributed in excess of one million descriptive booklets and maps. An additional comparable quantity has been handled for community organizations of the state.

Competition for the tourist dollar is becoming progressively intense. As America settles more solidly into normal peacetime routine, it becomes increasingly evident that the various states and sections of the country are engaged in a frank out and out race for the vacation dollar. The Council of State Governments reports that 45 of the 48 states are engaged in advertising programs designed to exploit their natural resources. Thirty-five foreign nations now maintain travel bureaus in the City of New York in an effort to attract a share of America's annual ten billion dollar tourist expenditure.

MISCELLANEOUS ACTIVITIES

Research

The research activities of the department for the past biennium have been confined to those projects which seemed absolutely essential. The construction program has absorbed the time of all available engineering employees, necessitating the postponement of many research projects which would undoubtedly have been of a great benefit to highway work. With the limited personnel available, the following projects have been carried on:

1. Following the failure of the Tacoma Narrows Bridge, a National Advisory Board on the Investigation of Suspension Bridges was formed. This board consists of representatives of many agencies which are vitally interested in the program. Because of previous work done by this department on suspension bridges, we were requested to cooperate. Our part of the work has been completed and the results submitted to the national board. The publication of this report will be made shortly by the U. S. Government printing office.

2. Measurements and inspections to determine the effect of expansion joints in concrete pavements have been continued on the Lombard-Killingsworth Section in Portland and on a section of concrete pavement near Halsey. The Lombard-Killingsworth Section has been in service for approximately eight years and much valuable information has been obtained. Based on this experimental section, expansion joints have now been eliminated in concrete pavements except at the ends of bridges and at a few other points where special expansion problems arise. The experimental section at Halsey was to determine the effect of elimination of expansion joints on horizontal curves. This experiment has been completed and a final report made to the federal government.

3. For many years there has been considerable question as to the distribution of load to the several girders of reinforced concrete bridges. This question arises because of the uncertainty as to the effect of rigid diaphragm beams which tie the girders together. During the past biennium, a reinforced concrete bridge has been built over Oneonta Creek on the Columbia River Highway. This structure is of a size

and type which lends itself admirably to the measurement of the load distribution to the several girders. Appropriate measurements were taken and the data are now being analyzed and a report on the project prepared.

4. Due to the salt spray exposure along the Oregon Coast, the painting of steel bridges has become a major problem. During the past biennium, apparatus has been developed which allows the testing of paints under control conditions in the laboratory which closely simulate the actual conditions in the field. A comprehensive series of tests has been made on various types of paint available for use, and on the basis of these tests the paint most resistant to salt water exposure has been selected.

New Building for State Highway Offices

For the past eighteen years, the Highway Department has maintained its headquarters offices in the State Office Building at Salem. During that time, the Department's operations and office space requirements have more than doubled. The needs of other state departments have prevented expansion within the State Office Building with the result that from time to time parts of the Highway Department have had to be removed from the Office Building and housed at such other locations as were obtainable. This splitting up of the Department, together with attendant conditions of overcrowding, has been a source of great inconvenience and has made efficient operation difficult. The Highway Commission has hoped that on completion of the second State Office Building now under construction in Salem, this situation could be corrected and the Highway Department again brought together under a single roof. It developed, however, that all of the space in the new building is needed by other state departments, which like the Highway Department, have grown far beyond the capacities of present state-owned buildings and are either working under overcrowded conditions or in makeshift quarters in various scattered locations.

The need of the Highway Department for more suitable office space in Salem had been considered as early as 1937 and, in that year, an act was passed by the State Legislature authorizing the construction of a building for that specific

purpose. Therefore, when it became evident that the new State Office Building would not provide the needed space, the Highway Commission began investigation of the possibilities of a separate building for the highway offices. Then, after discussions with the Board of Control and careful consideration of costs and other factors involved, the Commission decided to undertake the construction of a highway building under authority of the legislative act referred to.

The site selected for the building is the block on the east side of Summer Street, between Chemeketa Street and Center Street, which is the block immediately north of the block on which the new State Office Building is being constructed. Tentative plans call for a five-story building with exterior of marble to conform with that of other buildings in the Capitol Group. The cost of the building and site is expected to be about $2,000,000.

Joseph-Wallowa Lake Secondary Highway borders the lake for some five miles

Mineral spring waters are found in Cascadia State Park on the Santiam Highway in Linn County.

Section Three

FINANCIAL STATEMENTS

Covering the Fiscal Period

July 1, 1946, to June 30, 1948

AND

STATISTICAL INFORMATION

PERTAINING TO

State Highway and County Roads

IN THE

STATE OF OREGON

INDEX TO TABLES

		Page
Table No. 1.	Detailed Summary of Income and Expenditures	131
Table No. 2.	Summary of Expenditures	133
Table No. 3.	Mileages of Highway Construction Work Performed	134
Table No. 4.	Mileages of State Highways Maintained	135
Table No. 5.	State Funds Received and Expended, 1917 to 1948	136
Table No. 6.	Yearly Expenditures by Funds, 1917 to 1948	137
Table No. 7.	Summary of Expenditures by Major Items, 1917 to 1948	138
Table No. 8.	Summary of Expenditures, 1917 to 1948	139
Table No. 9.	Incomes from Different Sources, 1917 to 1948	140
Table No. 10.	Expenditures for Different Purposes, 1917 to 1948	142
Table No. 11.	Construction Expenditures, Primary Highways	146
Table No. 12.	Maintenance Expenditures, Primary Highways	148
Table No. 13.	Primary Highway Construction Expenditures by Counties	149
Table No. 14.	Primary Highway Maintenance Expenditures by Counties	150
Table No. 15.	Secondary Highway Construction Expenditures by Counties	151
Table No. 16.	Secondary Highway Maintenance Expenditures by Counties	152
Table No. 17.	County Road and City Street Construction Expenditures by Counties	153
Table No. 18.	County Road and City Street Maintenance Expenditures by Counties	154
Table No. 19.	Forest Highway Expenditures by Counties	155
Table No. 20.	Forest Highway Expenditures by Highways	156
Table No. 21.	Forest Highway Statistics by Years	157
Table No. 22.	County Disbursements for Road Purposes	159
Table No. 23.	State Highway Bond Indebtedness	160
Table No. 24.	State Highway Bonds Issued and Retired	161
Table No. 25.	County Indebtedness for Road Purposes	162
Table No. 26.	Apportionment of Motor Vehicle Revenues to Counties	163
Table No. 27.	Apportionment of Motor Vehicle Revenues to Cities	164
Table No. 28.	Mileages of Primary State Highways	168
Table No. 29.	Mileages of Primary Highways by Counties	169
Table No. 30.	Mileages of Secondary State Highways	170
Table No. 31.	Mileages of Secondary Highways by Counties	172
Table No. 32.	Mileages of County Roads	173
Table No. 33.	List of Persons Rendering Special Services	174
Map of State Highway System—Opposite Page		176

OREGON STATE HIGHWAY COMMISSION

DETAILED SUMMARY OF INCOME AND EXPENDITURES

July 1, 1948 to June 30, 1949

I - INCOME

State Funds

Motor vehicle license fees	$ 2,929,695.68
Gasoline tax	20,246,147.85
Diesel fuel tax	597.01
Motor transportation tax	5,112,680.05
Fines for traffic law violations	254,792.76
Receipts from rentals, discounts, etc.	47,766.25
Contributions to cities withheld	250,000.00
Subtotal, state funds	$28,841,679.60

Less Contributions

To State Police	$ 1,051,160.51
To counties	5,413,505.28
To cities	2,778,090.12
Loans to counties	800,945.00
Subtotal, contributions	$10,043,700.91
Total net income, state funds	$18,797,978.69

Cooperative Funds

County cooperative funds	$ 34,655.30
Federal cooperative funds	6,081,481.69
Miscellaneous cooperative funds	40,822.13
Subtotal, cooperative funds	$ 6,156,959.12
Grant total net income	$24,954,937.81
Balance on hand, July 1, 1948	16,262,492.17
Total funds available	$41,217,429.98

II - EXPENDITURES

CAPITAL OUTLAYS

Construction federal projects	$11,564,939.03
Construction, state projects	3,806,919.03
Cooperation in forest road work	183,000.00
Minor betterments	676,596.57
City allotment projects	233,052.58
Surveys	556,447.93
Real property negotiation expense	100,767.38
Purchase of right of way, quarries, etc.	1,992,894.93
Purchase of parks	48,496.81
Improvements in parks	118,120.53
Improvements at maintenance stations	194,636.56
Improvements of other properties	73,266.68
Equipment purchases less credits for sales and depreciation	831,994.14
Subtotal, capital outlays	$20,381,132.17

MAINTENANCE

Special maintenance	$ 930,760.08
General maintenance, primary	7,260,827.48
General maintenance, secondary	2,375,344.92
County road signs, etc.	17,481.99
Maintenance station upkeep	92,212.24
Radio communication system	24,301.79
Truck load inspection	178,469.32
District maintenance superintendence	220,931.81
Subtotal, maintenance	$11,100,329.63

OPERATION

Administration and general supervision	$ 1,007,107.89
Planning and traffic surveys	241,162.23
Travel information bureau	259,459.35
Operation of parks	194,738.34
Leases, quarries, stockpile sites, etc.	6,714.39
Operation of drawbridges and ferries	183,755.69
Research and special investigation	12,448.32
Contribution to retirement fund	390,158.48
Legislative interim committee expense	62,877.86
Miscellaneous general expense	74,406.32
Subtotal, operation	$ 2,432,828.87
Service and clearing accounts	Cr. 161,648.27
Bond interest and maturities	545,247.67
Total expenditures	$34,297,890.07

Table No. 1

DETAILED SUMMARY OF INCOME AND EXPENDITURES

July 1, 1946 to June 30, 1948

INCOME

Classification	Receipts July 1, 1946 to June 30, 1947	Receipts July 1, 1947 to June 30, 1948	Total Receipts July 1, 1946 to June 30, 1948
State Funds:			
Motor vehicle license fees	$ 4,895,202.07	$ 3,637,695.57	$ 8,532,897.64
Gasoline tax	17,239,733.50	19,108,498.27	36,348,231.77
Diesel fuel tax	313,760.16	234,346.47	548,106.63
Motor transportation fees	2,634,124.37	3,939,777.63	6,573,902.00
Fines for traffic law vioation	176,908.24	232,469.25	409,377.49
Contributions to cities withheld	.....	250,000.00	250,000.00
Receipts from rentals, discounts, etc.	102,215.38	49,711.96	151,927.34
Subtotals, state funds	$25,361,943.72	$27,452,499.15	$52,814,442.87
Less Contributions:			
To state police	$ 456,605.34	$ 1,035,763.45	$ 1,492,368.79
To counties	3,506,502.42	6,217,506.05	9,724,008.47
To cities	1,116,720.52	2,663,328.79	3,780,049.31
Advance loans to counties			
Subtotals, contributions	$ 5.079,828.28	$ 9,916,598.29	$14,996,426.57
Total net income, state funds	$20,282,115.44	$17,535,900.86	$37,818,016.30
Cooperative Funds:			
County cooperative funds	$ 1,550.00	$ 16,200.00	$ 17,750.00
Federal cooperative funds	3,264,063.86	7,368,041.57	10,632,105.43
Miscellaneous cooperative funds	18.388.00	4,033.33	22,421.33
Subtotals, cooperative funds	$ 3,284,001.86	$ 7,388,274.90	$10,672,276.76
Grand total net income	$23,566,117.30	$24,924,175.76	$48,490,293.06
Balance on hand, July 1, 1946	15,929,177.83	.....	15,929,177.83
Total funds available	$39,495,295.13	$24,924,175.76	$64,419,470.89

167

Table No. 1—Continued

EXPENDITURES

Classification	Expended July 1, 1946 to June 30, 1947	Expended July 1, 1947 to June 30, 1948	Total Expended July 1, 1946 to June 30, 1948
Capital Outlays:			
Construction, primary highways	$ 5,523,583.41	$ 9,784,753.62	$15,308,337.03
Construction, secondary highways	3,088,228.16	2,895,934.11	5,984,162.27
Construction, county roads	239,662.34	642,455.52	882,117.86
Cooperation in forest road work	200,000.00	25,000.00	225,000.00
Expenditure of city allotment	.....	6,109.48	6,109.48
Minor betterments	298,510.84	670,695.34	969,206.18
Surveys	279,757.75	250,812.70	530,570.45
Real property negotiation expense	59,689.94	83,317.77	143,007.71
Purchase of right of way, quarries, etc.	699,622.49	1,184,596.70	1,884,219.19
Purchase of parks	22,724.37	64,920.66	87,645.03
Improvements in parks	39,655.23	59,966.46	99,621.69
Improvements at maintenance stations	73,288.64	105,770.16	179,058.80
Improvements of other properties	13,593.03	89,157.80	102,750.83
Equipment purchases less credits for sales and depreciation	600,290.03	733,901.31	1,334,191.34
Subtotals, capital outlays	$11,138,606.23	$16,597,391.63	$27,735,997.86
Maintenance:			
Special maintenance	$ 346,874.62	$ 420,611.37	$ 767,485.99
General maintenance, primary	4,458,292.11	4,913,553.79	9,371,845.90
General maintenance, secondary	1,333,166.62	1,482,782.92	2,815,949.54
Maintenance of county roads, signs, etc.	17,437.49	23,513.71	40,951.20
Maintenance of city streets	29,769.39	6,931.45	36,700.84
District maintenance superintendence	161,811.28	180,138.92	341,950.20
Subtotals, maintenance	$ 6,347,351.51	$ 7,027,532.16	$13,374,883.67
Operation:			
Administration and general supervision	$ 666,077.94	$ 782,524.36	$ 1,448,602.80
Planning and traffic surveys	225,955.64	206,540.38	432,496.02
Travel and information bureau	197,612.64	299,817.24	497,429.88
Radio communication system	18,443.72	17,779.91	36,223.63
Operation of parks	97,489.98	139,508.02	236,998.00
Operation of maintenance stations, etc.	63,533.54	82,998.06	146,531.60
Operation of drawbridges and ferries	145,969.06	124,518.95	270,488.01
Truck load inspection	114,491.35	136,677.39	251,168.74
Research and special investigation	4,190.10	5,407.65	9,597.75
Revolving fund increases	350,000.00	.....	350,000.00
Contribution to retirement fund	184,496.47	367,018.56	551,515.03
Miscellaneous general expense	71,363.24	101,122.26	172,485.50
Subtotals, operation	$ 2,139,623.68	$ 2,263,912.78	$ 4,403,536.46
Service and clearing accounts	155,618.93	851,293.54	1,006,912.47
Bond interest and maturities	983,528.33	652,119.93	1,635,648.26
Total expenditures	$20,764,728.68	$27,392,250.04	$48,156,978.72

Table No. 2—SUMMARY OF EXPENDITURES JULY 1, 1946 TO JUNE 30, 1948

Classification of Expenditures	Total Amount Expended	Cooperation in Expenditures: State	County	Federal Government	Misc. Contributors
Construction, primary highways	$15,308,337.03	$ 7,861,199.10	$ 1,550.00	$ 7,427,199.93	$ 18,388.00
Construction, secondary highways	5,984,162.27	3,577,424.02		2,384,316.92	22,421.33
Construction, county roads	882,117.86	438,475.62	16,200.00	427,442.24	
Cooperation in forest road work	225,000.00	225,000.00			
Expenditure of city allotment	6,109.48	6,109.48			
Minor betterments	969,206.18	969,206.18			
Surveys and engineering county work	530,570.45	506,773.26		23,797.19	
Real property negotiation expense	143,007.71	143,007.71			
Purchase of rights of way,quarries, etc.	1,884,219.19	1,684,322.66		199,896.53	
Purchase of parks	87,645.03	87,645.03			
Improvements in parks	99,621.69	99,621.69			
Improvements at maintenance stations	179,058.80	179,058.80			
Improvements of other properties	102,750.83	102,750.83			
Equipment purchases less credits for sales and depreciation	1,334,191.34	1,334,191.34			
Subtotals, capital outlays	$27,735,997.86	$17,214,785.72	$ 17,750.00	$10,462,652.81	$ 40,809.33
Special maintenance	767,485.99	767,485.99			
General maintenance, primary	9,371,845.90	9,333,463.85		38,382.05	
General maintenance, secondary	2,815,949.54	2,815,949.54			
Maintenance of county roads, signs, etc.	40,951.20	40,951.20			
Maintenance of city streets	36,700.84	36,700.84			
District maintenance superintendence	341,950.20	341,950.20			
Subtotals, maintenance	$13,374,883.67	$13,336,501.62	$	$ 38,382.05	$
Administration and general supervision	$ 1,448,602.30	$ 1,448,602.30	$	$	$
Planning and traffic surveys	432,496.02	299,575.41		132,920.61	
Travel and information bureau	497,429.88	497,429.88			
Radio communication system	36,223.63	36,223.63			
Operation of parks	236,998.00	236,998.00			
Operation of maintenance stations, etc.	146,531.60	146,531.60			
Operation of drawbridges and ferries	270,488.01	270,488.01			
Truck load inspection	251,168.74	251,168.74			
Research and special investigation	9,597.75	9,597.75			
Revolving fund increases	350,000.00	350,000.00			
Contribution to retirement fund	551,515.03	551,515.03			
Miscellaneous general expense	172,485.50	172,485.50			
Subtotals, operation	$ 4,403,536.46	$ 4,270,615.85	$	$ 132,920.61	$
Service and clearing accounts	$ 1,006,912.47	$ 1,006,912.47	$	$	$
Bond interest and maturities	1,635,648.26	1,635,648.26			
Totals	$48,156,978.72	$37,464,463.92	$ 17,750.00	$10,633,955.47	$ 40,809.33

Table No. 3

MILEAGES OF HIGHWAY CONSTRUCTION WORK PERFORMED by the STATE HIGHWAY COMMISSION

New Construction and Reconstruction

Highway System and Year	Concrete Pavement (Miles)	Bituminous Pavement (Miles)	Bituminous Macadam (Miles)	Oiled Surfacing (Miles)	Rock and Gravel Surfacing (Miles)	Grading (Miles)	Bridges Over 20 feet (No.)	Grade Separations (No.)
Primary:								
1917-1938	297.8	678.3	939.0	2,458.7	3,864.5	3,687.4	977	48
1939	2.3	2.3	.....	242.3	172.7	53.8	8	2
1940	24.9	6.1	42.8	170.3	166.0	62.4	32	5
1941	3.2	1.6	44.7	65.7	110.8	96.3	15	2
1942	17.1	9.7	38.9	51.1	104.2	95.0	31	1
1943	0.8	6.3	17.4	8.4	33.3	26.8	4	3
1944	2.8	8.5	7.3	11.5	23.0	18.3	15	.....
1945	.....	6.7	.....	12.0	12.1	0.3	3	.....
1946	.....	9.1	16.0	37.3	53.4	60.9	4	1
1947	16.4	16.1	8.8	58.5	83.9	108.4	20	6
1948	1.1	37.5	28.2	73.4	139.9	69.8	30	7
Totals	366.4	782.2	1,143.1	3,189.2	4,763.8	4,279.4	1,139	75
1949							20	4
Secondary:								
1933-1938	3.8	1.5	16.8	242.4	202.2	187.1	80	9
1939	0.2	.....	.....	137.3	61.6	44.0	3	.....
1940	.....	.....	4.9	65.6	47.5	58.7	3	.....
1941	4.2	.....	8.5	125.0	126.3	41.3	16	1
1942	0.5	1.7	.....	75.3	97.2	51.7	3	1
1943	.....	0.3	.....	6.0	9.1	6.3	.....	.....
1944	.....	6.2	.....	71.0	84.1	13.2	2	.....
1945	.....	3.6	.....	9.1	17.8	4.3	.....	.....
1946	.....	0.6	7.2	27.3	42.1	45.1	.....	.....
1947	.....	0.1	3.5	155.8	142.2	80.1	2	1
1948	.....	22.8	2.9	74.2	105.1	81.3	7	1
Totals	8.7	36.8	43.8	989.0	935.2	613.1	116	13
1949							1	--
Other Roads:								
1935-1938	3.7	12.9	9.0	109.0	72.4	45.7	4	5
1939	0.1	6.9	.....	26.4	17.9	18.7	.....	1
1940	0.5	.....	.....	24.5	32.7	24.0	1	.....
1941	0.3	2.6	6.5	19.3	28.9	21.0	1	.....
1942	2.5	6.4	13.9	23.2	38.1	36.2	7	.....
1943	0.1	0.5	.....	9.2	15.0	13.2	1	1
1944	.....	.....	3.4	12.2	21.8	19.3	5	.....
1945	.....	0.4	0.3	8.4	6.2	5.5	1	.....
1946	.....	.....	.....	16.4	6.9	4.1	.....	.....
1947	.....	7.8	.....	5.7	12.9	7.2	.....	.....
1948	.....	6.6	5.0	30.1	40.3	12.2	5	.....
Totals	7.2	44.1	38.1	284.4	293.1	207.1	25	7
1949							4	--

Table No. 3—Continued

Resurfacing, Widening and Betterment

Highway System and Year	Pavement Resurfacing and Widening (Miles)	Non-skid Treatment of Pavement (Miles)	Contract Re-oiling (Miles)	Rock and Gravel Resurfacing (Miles)	Grade Widening (Miles)
Primary:					
1917-1940	48.0	399.6	291.0	261.7	336.2
1941	.....	20.3	20.3	.....	10.0
1942	.....	.....	1.1	.....	6.6
1943	.....	.....	16.0	1.1	.....
1944	.....	.....	1.1	.....	.....
1945	.....	.....	.....	.....	.....
1946	2.0	.....	.....	.....	.....
1947	.....	.....	.....	.....	.....
1948	.....	.....	24.1	.....	.....
Totals	50.0	419.9	353.6	262.8	352.8
Secondary:					
1940-1942	.....	.....	20.0	.....	.....
1943	.....	.....	.....	.....	.....
1944	.....	.....	34.9	5.1	17.9
1945	.....	.....	0.7	2.6	.....
1946	.....	.....	34.6	.....	.....
1947	.....	.....	.....	.....	.....
1948	.....	.....	.....	.....	.....
Totals	.....	.....	90.2	7.7	17.9

Table No. 4

MILEAGES OF STATE HIGHWAYS MAINTAINED BY THE STATE HIGHWAY COMMISSION

Highway System and Year	Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Rock Surfacing	Unoiled Rock Surfacing	Graded and Unimproved Earth	Total
Primary:							
1940	322	530	1,116	2,244	374	131	4,717
1941	325	527	1,122	2,367	330	89	4,760
1942	336	533	1,208	2,313	282	109	4,781
1943	338	524	1,218	2,329	242	139	4,790
1944	337	529	1,223	2,324	244	143	4,800
1945	338	528	1,223	2,324	244	150	4,807
1946	332	540	1,230	2,310	244	139	4,795
1947	343	558	1,222	2,376	190	118	4,807
1948	344	547	1,248	2,405	190	83	4,817
1949	345	561	1,272	2,411	160	73	4,822
Secondary:							
1940	46	134	41	727	915	445	2,308
1941	54	133	48	939	794	381	2,349
1942	45	140	51	993	757	375	2,361
1943	50	140	52	993	696	419	2,350
1944	45	141	51	1,048	681	384	2,350
1945	46	141	51	1,060	669	396	2,363
1946	46	141	52	1,102	656	377	2,374
1947	50	172	66	1,235	545	329	2,397
1948	50	172	40	1377	583	216	2,438
1949	[illegible]	180	[illegible]	[illegible]	521	213	[illegible]

~~See previous reports for details covering years prior to~~ 1940.

Table No. 5

STATE FUNDS RECEIVED AND EXPENDED BY THE STATE HIGHWAY COMMISSION

From 1917 to June 30, 1948

Year	Net Receipts (State Funds Only)	Net Expenditures (State Funds Only)
1917 (including $94,418.14 balance from 1916)	$ 1,802,190.22	$ 674,249.61
1918	1,759,600.15	2,214,007.87
1919	7,458,614.05	6,278,304.16
1920	11,320,354.05	11,381,606.97
1921	13,550,136.40	15,045,824.65
1922	9,608,966.45	7,724,688.96
1923	7,664,977.79	7,287,991.77
1924	6,115,536.48	6,916,867.91
1925	10,231,908.30	10,611,283.45
1926	7,345,080.19	7,927,130.75
1927	8,627,279.00	8,474,609.91
1928	8,721,396.09	8,975,204.79
1929	10,658,473.58	10,160,542.57
1930	13,897,663.65	12,808,014.45
1931	10,930,545.38	11,108,835.57
1932	9,925,665.72	10,812,369.81
1933	7,804,925.99	7,860,497.50
1934	8,798,396.81	7,517,063.41
1935	14,469,922.86	13,687,022.82
1936	10,943,742.46	13,194,698.50
1937	11,921,069.07	12,595,127.42
1938	11,418,916.44	11,261,453.70
1939	11,771,364.62	11,158,189.25
1940	12,759,332.27	12,156,575.57
1941	15,093,637.57	14,874,800.01
1942	13,450,738.45	13,290,781.61
1943	11,738,155.10	9,128,388.61
1944	11,714,984.39	8,499,431.13
1945	13,224,169.64	7,635,689.97
1946	18,681,153.29	15,336,831.64
1947	19,783,754.69	19,282,928.54
1948 (to June 30)	8,106,461.38	9,155,607.48
Totals	$341,299,112.53	$325,036,620.36
Balance on hand, July 1, 1948		16,262,492.17
Totals		$341,299,112.53

Table No. 6—YEARLY EXPENDITURES ON WORK HANDLED UNDER THE SUPERVISION OF THE STATE HIGWAY COMMISSION

From 1917 to June 30, 1948

Year	State Funds	County Funds	Government Funds	Miscellaneous Contributors' Funds	Totals
1917	$ 674,249.61	$ 270,162.37	$	$	$ 944,411.98
1918	2,214,007.87	439,562.42	.....	.....	2,653,570.29
1919	6,278,304.16	368,550.01	224,851.60	.....	6,871,705.77
1920	11,381,606.97	866,836.96	1,096,027.33	19,364.26	13,363,835.51
1921	15,045,824.65	984,296.42	2,181,956.65	47,913.16	18,259,990.88
1922	7,724,688.96	3,727,388.65	1,043,695.07	120,354.97	12,616,127.65
1923	7,287,991.77	2,180,266.25	1,719,088.71	149,075.88	11,336,422.61
1924	6,916,867.91	1,544,267.37	1,118,777.53	136,150.73	9,716,063.54
1925	10,611,283.45	1,297,105.54	1,327,328.92	92,638.46	13,328,356.37
1926	7,927,130.75	704,856.67	1,264,688.74	89,761.29	9,986,437.45
1927	8,474,609.91	611,924.22	1,111,521.64	65,387.07	10,263,442.85
1928	8,975,204.79	683,283.51	582,440.20	27,315.83	10,268,244.33
1929	10,160,542.57	532,907.15	624,415.28	9,969.29	11,327,834.29
1930	12,808,014.45	280,079.24	1,565,288.34	14,554.57	14,667,936.60
1931	11,108,835.57	236,863.93	4,535,069.46	19,947.46	15,900,716.42
1932	10,812,369.81	165,238.34	1,703,369.15	63,513.25	12,744,490.55
1933	7,860,497.50	168,028.79	2,723,724.39	26,912.05	10,779,162.73
1934	7,517,063.41	174,720.24	6,023,993.01	3,522.50	13,719,299.16
1935	13,687,022.82	133,562.57	4,165,503.33	10,000.00	17,996,088.72
1936	13,194,698.50	129,233.41	6,375,343.26	8,773.61	19,708,048.78
1937	12,595,127.42	80,174.48	4,589,894.89	62,146.90	17,327,343.69
1938	11,261,453.70	186,284.48	2,873,801.64	25,000.00	14,346,539.82
1939	11,158,189.25	9,480.34	2,652,475.77	12,202.46	13,832,347.82
1940	12,156,575.57	4,000.00	2,926,250.31	30,976.06	15,117,801.94
1941	14,874,800.01	62,041.05	2,810,894.93	7,250.00	17,754,985.99
1942	13,290,781.61	8,492.08	2,273,616.82	13,926.38	15,586,816.89
1943	9,128,388.61	1,550.00	4,341,584.26	32,500.00	13,504,022.87
1944	8,499,431.13	8,550.00	3,108,858.22	30,112.71	11,646,952.06
1945	7,635,689.97	1,550.00	2,290,000.27	861.01	9,928,101.25
1946	15,336,831.64	1,550.00	2,339,091.54	385.08	17,677,858.26
1947	19,282,928.54	16,200.00	6,771,812.00	22,421.33	26,093,361.87
1948 (to June 30)	9,155,607.48	.....	1,811,714.00	.....	10,967,321.48
Totals	$325,036,620.36	$ 15,879,006.49	$ 78,177,077.26	$ 1,142,936.31	$420,235,640.42

Table No. 7

SUMMARY OF EXPENDITURES BY MAJOR ITEMS

From 1917 to June 30, 1948

Classification of Expenditures	Total Amount Expended	Cooperation in Expenditures			
		State	County	Government	Misc. Contributors
Capital Outlays:					
Contract construction	$195,815,419.45	$102,408,452.11	$ 15,248,637.69	$ 77,017,287.90	$ 1,141,041.75
Cooperation in forest road work	6,393,679.46	5,899,329.09	494,350.37	.....	.....
Minor betterments	8,396,370.20	8,387,097.46	5,272.74	4,000.00	.....
Surveys	5,811,540.56	5,740,270.90	15,672.21	55,597.45	.....
Subtotals, construction	$216,417,009.67	$122,435,149.56	$ 15,763,933.01	$ 77,076,885.35	$ 1,141,041.75
Rights of way, quarries, etc.	9,325,481.05	9,104,318.51	9,909.75	211,252.79	.....
Parks	1,236,052.36	1,221,073.36	.....	14,979.00	.....
Buildings and improvements (except parks)	1,357,293.68	1,324,834.08	.....	32,459.60	.....
Equipment (subsequent to 1934 only)	1,754,017.22	1,754,017.22	.....	.....	.....
Subtotals, capital outlays (including construction)	$230,089,853.98	$135,839,392.73	$ 15,773,842.76	$ 77,335,576.74	$ 1,141,041.75
Maintenance:					
Special maintenance	$ 10,138,944.27	$ 9,960,335.43	$ 2,516.17	$ 175,979.98	$ 112.69
General maintenance	73,411,309.75	73,273,323.37	84,204.52	51,999.99	1,781.87
Other maintenance items	3,669,056.27	3,661,607.12	1,643.53	5,805.62	.....
Subtotals, maintenance	$ 87,219,310.29	$ 86,895,265.92	$ 88,364.22	$ 233,785.59	$ 1,894.56
Miscellaneous:					
Administration	$ 9,776,748.49	$ 9,776,748.49	$	$	$ .....
Miscellaneous operations	10,764,401.85	10,139,887.41	16,799.51	607,714.93	.....
Bond interest and maturities	82,385,325.81	82,385,325.81	.....	.....	.....
Subtotals, miscellaneous	$102,926,476.15	$102,301,961.71	$ 16,799.51	$ 607,714.93	$ .....
Totals	$420,235,640.42	$325,036,620.36	$ 15,879,006.49	$ 78,177,077.26	$ 1,142,936.31

For a summary of expenditures in detail see Table No. 10.

Table No. 8—SUMMARY OF EXPENDITURES FROM 1917 TO JUNE 30, 1948

Classification of Expenditures	Total Amount Expended	Cooperation in Expenditures			
		State	County	Government	Misc. ~~Contributors~~
Construction, primary highways	$169,368,913.59	$ 88,858,263.58	$ 14,466,823.34	$ 64,975,668.00	$ 1,068,158.67
Construction, secondary highways	19,437,444.68	10,643,887.37	424,232.57	8,346,248.07	23,076.67
Construction, county roads	7,002,951.70	2,900,191.68	357,581.78	3,695,371.83	49,806.41
Cooperation in forest road work	6,393,679.46	5,899,329.09	494,350.37	.....	.....
Expenditure of city allotment	6,109.48	6,109.48	.....	.....	.....
Minor betterments	8,396,370.20	8,387,097.46	5,272.74	4,000.00	.....
Surveys and engineering, county work	5,811,540.56	5,740,270.90	15,672.21	55,597.45	.....
Real property negotiation expense	652,194.00	652,194.00	.....	.....	.....
Purchase of rights of way, quarries, etc.	8,673,287.05	8,452,124.51	9,909.75	211,252.79	.....
Purchase of parks	855,163.47	855,163.47	.....	.....	.....
Improvements in parks	380,888.89	365,909.89	.....	14,979.00	.....
Improvements at maintenance stations	827,609.19	795,149.59	.....	32,459.60	.....
Improvements of other properties	529,684.49	529,684.49	.....	.....	.....
Equipment purchases, sales and depreciation	1,754,017.22	1,754,017.22	.....	.....	.....
Subtotals, capital outlays	$230,089,853.98	$135,839,392.73	$ 15,773,842.76	$ 77,335,576.74	$ 1,141,041.75
Special maintenance	10,138,944.27	9,960,335.43	2,516.17	175,979.98	112.69
General maintenance, primary	60,690,195.37	60,552,640.10	83,773.41	51,999.99	1,781.87
General maintenance, secondary	12,721,114.38	12,720,683.27	431.11	.....	.....
Maintenance of county roads, signs, etc.	677,262.25	673,238.23	1,643.53	2,380.49	.....
Maintenance of city streets	365,736.03	362,310.90	.....	3,425.13	.....
District maintenance superintendence	2,626,057.99	2,626,057.99	.....	.....	.....
Subtotals, maintenance	$ 87,219,310.29	$ 86,895,265.92	$ 88,364.22	$ 233,785.59	$ 1,894.56
Administration and general supervision	9,776,748.49	9,776,748.49	.....	.....	.....
Planning and traffic surveys	1,601,786.90	1,019,343.97	.....	582,442.93	.....
Travel and information bureau	1,289,278.84	1,289,278.84	.....	.....	.....
Radio communication system	202,915.92	177,643.92	.....	25,272.00	.....
Operation of parks	667,930.54	667,930.54	.....	.....	.....
Operation of maintenance stations, etc.	420,385.42	420,385.42	.....	.....	.....
Operation of drawbridges and ferries	1,656,233.54	1,639,434.03	16,799.51	.....	.....
Truck load inspection	600,012.94	600,012.94	.....	.....	.....
Contribution to retirement fund	551,515.03	551,515.03	.....	.....	.....
Miscellaneous	2,750,031.72	2,750,031.72	.....	.....	.....
Subtotals, operation	$ 19,516,839.34	$ 18,892,324.90	$ 16,799.51	$ 607,714.93	$ .....
Service and clearing accounts	1,024,311.00	1,024,311.00	.....	.....	.....
Bond interest and maturities	82,385,325.81	82,385,325.81	.....	.....	.....
Totals	$420,235,640.42	$325,036,620.36	$ 15,879,006.49	$ 78,177,077.26	$ 1,142,936.31

Table No. 9

SCHEDULE OF YEARLY INCOMES FROM DIFFERENT SOURCES

From 1917 to June 30, 1948

Source of Income	1917 to 1941 Inclusive	1942	1943	1944	1945
Balance on hand December 1, 1916	$ 94,418.14	$	$	$	$ .....
Bond sales (including accrued interest)	54,577,920.04	.....	.....	.....	.....
Motor vehicle license fees	72,265,839.47	3,224,862.56	3,234,580.79	3,300,038.92	3,416,141.33
Gasoline tax	127,266,152.48	11,816,457.22	9,648,354.61	9,637,960.11	11,033,246.54
Diesel fuel tax	.....	.....	65,082.40	224,890.71	230,292.05
Motor transportation fees	8,209,079.04	1,516,892.51	1,735,854.20	1,897,873.44	1,962,430.84
One-quarter mill property tax	1,724,032.33	.....	.....	.....	.....
Fines for traffic law violations	431,446.47	47,054.10	54,689.68	79,346.67	92,046.77
Receipts on rentals, discounts, etc.	564,081.07	4,796.42	2,907.87	3,274.01	4,333.64
Subtotals, state funds (gross)	$265,132,969.04	$ 16,610,062.81	$ 14,741,469.55	$ 15,143,383.86	$ 16,738,491.17
Less contributions to state police	2,984,296.35	344,252.46	390,898.76	380,662.52	428,111.75
Less contributions to counties	17,235,873.73	2,815,071.90	2,612,415.69	2,311,568.60	2,340,748.48
Less contributions to state general fund	313,103.37	.....	.....	.....	.....
Less contributions to cities	.....	.....	.....	736,168.35	745,461.30
Subtotals, state funds (net)	$244,599,695.59	$ 13,450,738.45	$ 11,738,155.10	$ 11,714,984.39	$ 13,224,169.64
County cooperation	15,841,114.41	8,492.08	1,550.00	8,550.00	1,550.00
Federal Government cooperation	55,240,400.15	2,273,616.82	4,341,584.26	3,108,858.22	2,290,000.27
Miscellaneous cooperation	1,042,729.80	13,926.38	32,500.00	30,112.71	861.01
Totals	$316,723,939.95	$ 15,746,773.73	$ 16,113,789.36	$ 14,862,505.32	$ 15,516,580.92

Table No. 9—Continued

SCHEDULE OF YEARLY INCOMES FROM DIFFERENT SOURCES

From 1917 to June 30, 1948

Source of Income	1917 to 1945 Inclusive	1946	1947	1948 (To June 30)	1917 to June 30, 1948
Balance on hand December 1, 1916	$ 94,418.14	$	$	$	$ 94,418.14
Bond sales (including accrued interest)	54,577,920.04	.....	.....	.....	54,577,920.04
Motor vehicle license fees	85,441,463.07	3,729,610.64	4,949,150.25	2,686,053.84	96,806,277.80
Gasoline tax	169,402,170.96	15,962,001.35	18,473,988.99	8,230,406.67	212,068,567.97
Diesel fuel tax	520,265.16	279,791.30	332,122.48	61,362.57	1,193,541.51
Motor transportation fees	15,322,130.03	2,278,000.12	2,940,719.04	2,321,448.41	22,862,297.60
One-quarter mill property tax	1,724,032.33	.....	.....	.....	1,724,032.33
Fines for traffic law violations	704,583.69	137,066.31	213,351.17	112,082.35	1,167,083.52
Receipts on rentals, discounts, etc.	579,393.01	59,344.66	76,554.92	23,676.45	738,969.04
Contributions to cities withheld	.....	.....	.....	250,000.00	250,000.00
Subtotals, state funds (gross)	$328,366,376.43	$ 22,445,814.38	$ 26,985,886.85	$ 13,685,030.29	$391,483,107.95
Less contributions to state police	4,528,221.84	338,708.71	766,460.09	510,183.20	6,143,573.84
Less contributions to counties	27,315,678.40	2,598,427.65	5,318,951.55	2,405,056.92	37,638,114.52
Less contributions to cities	1,481,629.65	827,524.73	1,116,720.52	2,663,328.79	6,089,203.69
Less contributions to state general fund	313,103.37	.....	.....	.....	313,103.37
Subtotals, state funds (net)	$294,727,743.17	$ 18,681,153.29	$ 19,783,754.69	$ 8,106,461.38	$341,299,112.53
County cooperation	15,861,256.49	1,550.00	16,200.00	.....	15,879,006.49
Federal Government cooperation	67,254,459.72	2,339,091.54	6,771,812.00	1,811,714.00	78,177,077.26
Miscellaneous cooperation	1,120,129.90	385.08	22,421.33	.....	1,142,936.31
Totals	$378,963,589.28	$ 21,022,179.91	$ 26,594,188.02	$ 9,918,175.38	$436,498,132.59

Table No. 10

SCHEDULE OF YEARLY EXPENDITURES

From 1917 to June 30, 1948

The expenditures in this table include all expenditures in connection with work handled under the direct supervision of the State Highway Commission during the period December 1, 1916 to June 30, 1948.

Classification of Expenditures	1917 to 1941 Inclusive	1942	1943	1944	1945
Construction, primary	$144,020,393.67	$ 4,934,468.74	$ 3,474,895.30	$ 1,106,930.02	$ 1,290,274.79
Construction, secondary	8,931,129.16	694,694.46	301,710.66	1,384,558.63	353,719.73
Construction, county roads	3,525,706.47	675,924.78	769,501.70	211,034.61	176,341.89
Cooperation in forest road work	6,105,503.86	.....	.....	Cr. 36,824.40	.....
Expenditure of city allotments	.....	.....	.....	.....	.....
Minor betterments	6,888,116.49	129,223.10	102,509.23	56,060.55	150,565.29
Surveys and engineering, county work	4,090,065.51	206,815.35	221,000.20	292,879.50	295,024.95
Subtotals, construction	$173,560,915.16	$ 6,641,126.43	$ 4,869,617.09	$ 3,014,638.91	$ 2,265,926.65
Real property negotiation expense	322,996.47	38,605.36	37,813.08	38,184.75	46,255.52
Purchase of rights of way, quarries, etc.	5,029,173.89	771,820.74	307,866.09	222,057.99	237,519.87
Purchase of parks	627,618.47	26,045.43	25,322.58	64,603.15	8,406.56
Improvements in parks	234,009.77	13,445.35	430.48	24.00	5,260.29
Improvements at maintenance stations	522,601.84	43,871.87	5,602.44	4,708.01	13,527.28
Improvements of other properties	375,185.52	24,312.45	16,676.36	13,245.03	Cr. 10,075.79
Equipment purchases, sales and depreciation	680,264.78	Cr. 60,509.06	Cr. 197,156.68	Cr. 81,663.65	Cr. 94,129.76
Subtotals, capital outlays (including construction)	$181,352,765.90	$ 7,498,718.57	$ 5,066,171.44	$ 3,275,798.19	$ 2,472,690.62

Special maintenance	6,763,604.20	467,782.59	837,095.41	1,202,085.86	71,165.61
General maintenance, primary	38,646,785.31	2,793,164.40	2,866,898.50	2,932,783.53	3,370,696.15
General maintenance, secondary	5,057,321.71	890,095.56	877,369.77	880,898.08	974,574.54
Maintenance of county roads, signs, etc.	62,958.16	63,525.90	41,556.24	27,117.72	25.01
Maintenance of city streets	6,178.67	161,735.99	141,962.85	16,772.21	150.15
District maintenance superintendence	1,681,192.18	114,027.41	131,623.75	125,628.22	128,261.87
Subtotals, maintenance	$ 52,218,040.23	$ 4,490,331.85	$ 4,896,506.52	$ 5,185,285.62	$ 4,544,873.33
Administration and general supervision	6,217,030.85	455,540.22	431,597.93	433,689.86	480,455.03
Planning and traffic surveys	871,359.01	75,263.94	52,307.64	53,426.77	59,989.65
Travel information bureau	627,616.20	36,855.18	12,508.03	21,616.54	57,031.53
Radio communication system	121,285.64	8,866.28	9,429.19	10,203.95	11,220.32
Operation of parks	242,985.89	38,186.59	33,360.48	41,208.93	41,183.18
Operation of maintenance stations, rights of way, etc.	195,616.14	33,630.36	25,875.55	14,536.08	Cr. 22,196.35
Operation of drawbridges and ferries	1,065,204.24	62,447.25	66,454.55	78,445.35	88,510.64
Truck load inspection	36,522.58	47,375.28	57,162.58	71,198.69	85,039.59
Contribution to retirement fund	.....	.....	.....	.....	.....
Miscellaneous	1,482,854.45	220,618.92	361,884.60	71,157.18	52,766.67
Subtotals, operation	$ 10,860,475.00	$ 978,784.02	$ 1,050,580.55	$ 795,483.35	$ 854,000.26
Service and clearing accounts	Cr. 673,748.08	192.09	19,944.80	165,216.11	374,797.14
Bond interest and maturities	71,073,672.69	2,618,790.36	2,470,819.56	2,225,168.79	1,681,739.90
Totals	$314,831,205.74	$ 15,586,816.89	$ 13,504,022.87	$ 11,646,952.06	$ 9,928,101.25

Table No. 10—Continued

SCHEDULE OF YEARLY EXPENDITURES

From 1917 to June 30, 1948

Classification of Expenditures	1946	1947	1948 (To June 30)	Reclassification Transfers	1917 to June 30, 1948
Construction, primary	$ 4,999,905.73	$ 8,892,800.12	$ 2,870,464.13	Cr. $ 2,221,072.58	$169,369,059.92
Construction, secondary	1,974,460.86	3,336,632.07	1,048,990.82	1,411,548.29	19,437,444.68
Construction, county roads	197,079.50	435,259.09	268,712.52	743,244.81	7,002,805.37
Cooperation in forest road work	100,000.00	200,000.00	25,000.00	.....	6,393,679.46
Expenditure of city allotments	.....	.....	6,109.48	.....	6,109.48
Minor betterments	258,532.19	552,958.14	258,317.80	59.00	8,396,341.79
Surveys and engineering, county work	302,966.08	291,955.86	110,861.52	.....	5,811,568.97
Subtotals, construction	$ 7,832,944.36	$13,709,605.28	$ 4,588,456.27	Cr. $ 66,220.48	$216,417,009.67
Real property negotiation expense	54,406.87	69,627.92	44,304.03	.....	652,194.00
Purchase of rights of way, quarries, etc.	530,599.80	709,939.59	864,309.08	.....	8,673,287.05
Purchase of parks	18,787.52	81,259.17	3,120.59	.....	855,163.47
Improvements in parks	17,476.58	73,265.35	15,375.67	21,601.40	380,888.89
Improvements at maintenance stations	48,423.28	101,725.01	46,195.33	40,954.13	827,609.19
Improvements of other properties	11,155.88	32,818.74	66,366.30	.....	529,684.49
Equipment purchases, sales and depreciation	270,980.90	884,661.41	351,569.28	.....	1,754,017.22
Subtotals, capital outlays (including construction)	$ 8,784,775.19	$15,662,902.47	$ 5,979,696.55	Cr. $ 3,664.95	$230,089,853.98

Special maintenance	291,597.52	381,664.57	133,293.38	Cr.	9,344.87	10,138,944.27
General maintenance, primary	4,340,183.29	4,752,248.05	2,082,391.76	Cr.	1,094,955.62	60,690,195.37
General maintenance, secondary	1,279,718.42	1,483,100.53	637,013.23		641,022.54	12,721,114.38
Maintenance of county roads, signs, etc.	15,114.66	17,792.39	11,953.22		437,218.95	677,262.25
Maintenance of city streets	30,105.57	10,797.82	Cr. 1,967.23		.....	365,736.03
District maintenance superintendence	147,086.01	172,374.39	99,864.16		26,000.00	2,626,057.99
Subtotals, maintenance	$ 6,103,805.47	$ 6,817,977.75	$ 2,962,548.52	Cr.	$ 59.00	$ 87,219,310.29
Administration and general supervision	630,748.98	718,884.73	405,076.94		3,723.95	9,776,748.49
Planning and traffic surveys	196,577.93	183,486.04	109,375.92		.....	1,601,786.90
Travel information bureau	147,794.41	229,671.89	156,185.06		.....	1,289,278.84
Radio communication system	13,413.04	19,399.32	9,098.18		.....	202,915.92
Operation of parks	83,080.99	116,361.03	71,563.45		.....	667,930.54
Operation of maintenance stations, rights of way, etc.	62,064.92	69,869.40	40,989.32		.....	420,385.42
Operation of drawbridges and ferries	96,150.09	128,114.72	70,906.70		.....	1,656,233.54
Truck load inspection	106,817.51	130,032.44	65,864.27		.....	600,012.94
Contribution to retirement fund	76,038.03	332,870.16	142,606.84		.....	551,515.03
Miscellaneous	66,979.86	431,875.05	61,894.99		.....	2,750,031.72
Subtotals, operation	$ 1,479,665.76	$ 2,360,564.78	$ 1,133,561.67		$ 3,723.95	$ 19,516,839.34
Service and clearing accounts	88,958.46	474,629.68	574,320.80		.....	1,024,311.00
Bond interest and maturities	1,220,653.38	777,287.19	317,193.94		.....	82,385,325.81
Totals	$17,677,858.26	$26,093,361.87	$10,967,321.48		$	$420,235,640.42

Table No. 11

EXPENDITURES FOR PRIMARY HIGHWAY CONSTRUCTION WORK SUMMARIZED BY HIGHWAYS

Years 1917 to June 30, 1948

This table gives the totals of the expenditures made for construction work upon each of the several primary state highways during the 32-year period ending June 30, 1948. It includes expenditures for construction, betterments, surveys, rights of way and state expenditures in connection with forest highway work.

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures			
			By State	By County	By Federal Government	By Miscel. Contributors
1	Pacific, Jct. City-South	$ 21,051,334.68	$ 14,052,473.79	$ 478,720.75	$ 6,386,504.31	$ 133,635.83
1-E	Pacific, East	13,869,077.31	6,623,711.84	309,508.14	6,799,427.58	136,429.75
1-W	Pacific, West	12,024,645.03	6,562,777.22	378,003.88	5,063,785.43	20,078.50
2	Columbia River	19,543,216.32	13,201,714.31	234,159.44	5,959,875.06	147,467.51
3	Oswego	964,629.02	644,719.20	168,309.82	114,100.00	37,500.00
4	The Dalles-California	8,494,061.47	3,722,436.95	1,032,498.39	3,674,356.81	64,769.32
5	John Day	6,209,253.78	3,271,946.59	599,304.42	2,336,002.77	2,000.00
6	Old Oregon Trail	10,282,316.67	5,221,724.86	715,601.17	4,108,158.89	236,831.75
7	Central Oregon	4,646,109.39	2,608,472.51	154,287.80	1,883,349.08	———
8	Oregon-Washington	1,944,761.50	1,466,587.13	122,649.31	355,525.06	———
9	Oregon Coast	28,046,197.61	17,036,493.30	2,044,814.63	8,918,525.17	46,364.51
10	Wallowa Lake	2,476,800.82	1,275,970.86	542,380.21	653,369.75	5,080.00
11	Enterprise-Lewiston	774,322.72	590,716.23	71,621.49	111,985.00	———
12	Baker-Homestead	1,467,200.50	680,623.79	377,811.17	353,987.36	54,778.18
13	Baker-Unity	1,217,107.49	751,408.50	331,113.14	134,585.85	———
14	Crooked River	452,152.11	353,651.13	98,500.98	———	———
15	McKenzie	2,100,942.70	1,039,799.13	427,755.02	618,179.76	15,208.79
16	Santiam	2,790,642.94	1,716,457.46	232,885.28	801,635.96	39,664.24
17	McKenzie-Bend	91,086.58	85,577.38	5,509.20	———	———
18	Willamette	2,345,469.27	1,091,067.03	311,897.95	942,504.29	———
19	Fremont	1,990,844.77	913,866.92	190,273.36	886,704.49	———
20	Klamath Falls-Lakeview	2,960,992.46	2,126,975.81	265,269.22	564,970.65	3,776.78
21	Green Springs	2,096,551.61	1,073,372.19	557,877.85	438,529.42	26,772.15
22	Crater Lake	3,096,971.86	1,618,252.55	177,121.60	1,301,597.71	———
23	Dairy-Bonanza	123,512.22	88,648.42	34,863.80	———	———
24	Burns-Crane	672,265.30	320,560.09	48,156.79	303,548.42	———
25	Redwood	965,509.92	633,872.15	54,507.82	277,129.95	———
26	Mt. Hood	2,540,665.98	1,820,606.27	505,287.08	214,772.63	———
27	Alsea	1,477,606.00	1,148,504.04	278,757.08	50,344.88	———
28	Pendleton-John Day	1,922,529.42	1,001,669.23	162,236.66	758,371.10	252.43
29	Tualatin Valley	2,409,697.12	1,763,991.17	177,813.38	455,193.64	12,698.93
30	Salem-Dallas	1,007,375.17	482,717.04	295,472.12	229,186.01	———
31	Albany-Corvallis	588,278.28	121,499.85	130,101.15	299,593.00	37,084.28

Table No. 11—Continued

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures: By State	By County	By Federal Government	By Miscel. Contributors
32	Three Rivers	606,761.96	526,471.53	21,646.19	58,644.24	———
33	Corvallis-Newport	1,794,824.97	1,230,874.01	274,379.35	280,951.35	8,620.26
34	Siuslaw	1,714,055.93	1,194,401.97	476,293.56	43,360.40	———
35	Coos Bay-Roseburg	1,959,449.03	1,050,835.62	649,440.43	243,072.98	16,100.00
36	Pendleton-Cold Springs	442,653.47	171,180.21	191,239.44	80,233.82	———
37	Wilson River	2,079,793.58	1,524,054.29	———	555,739.29	———
38	Oregon Caves	474,886.91	460,886.91	14,000.00	———	———
39	Salmon River	1,696,405.28	1,345,200.95	58,106.99	293,097.34	———
40	Beaverton-Hillsdale	304,442.50	167,189.53	61,252.97	76,000.00	———
41	Ochoco	2,375,276.11	1,388,282.64	173,593.13	810,900.34	2,500.00
42	Sherman	1,402,797.63	453,847.99	360,879.73	586,322.12	1,747.79
43	Monmouth-Independence	69,336.30	69,336.30	———	———	———
44	Wapinitia	791,922.44	500,422.42	———	291,500.02	———
45	Umpqua	1,689,288.27	334,336.72	366,174.97	988,776.58	———
46	Necanicum	675,423.45	366,564.84	148,986.77	159,871.84	———
47	Sunset	6,602,803.35	3,776,498.96	92,000.00	2,734,304.39	———
48	John Day-Burns	414,362.36	305,687.36	———	108,675.00	———
49	Lakeview-Burns	589,965.48	341,920.77	31,604.06	216,440.65	———
50	Klamath Falls-Malin	843,679.37	571,225.02	77,816.14	177,600.37	17,037.84
51	West Portland-Hubbard	616,973.86	293,963.33	———	323,010.53	———
52	Heppner	1,260,148.27	943,322.09	315,066.35	———	1,759.83
53	Warm Springs	1,060,761.83	494,736.83	———	566,025.00	———
54	Boardman-Stanfield	620,416.54	218,648.66	———	401,767.88	———
55	Halfway	249,290.22	88,252.79	122.798.01	38,239.42	———
	Flight Strips	1,130,373.55	750.97	———	1,129,622.58	———
	Undistributed, Co. General	559,986.57	524,377.71	35,608.86	———	———
	Undistributed, Entire State	5,607.61	5,607.61	———	———	———
	Totals	$194,675,814.86	$113,461,742.97	$14,985,957.05	$65,159,956.17	$ 1,068,158.67
	Primary maintenance	72,158,086.45	71,857,829.66	84,302.28	214,059.95	1,894.56
	Secondary construction	22,249,198.74	13,372,869.78	426,015.94	8,427,236.35	23,076.67
	Secondary maintenance	14,010,493.85	13,994,155.42	2,418.41	13,920.02	———
	County road construction	7,773,364.78	3,673,214.98	361,869.77	3,688,473.62	49,806.41
	County road maintenance	1,050,699.99	1,043,250.84	1,643.53	5,805.62	———
	General purposes	108,452,140.03	107,767,714.99	16,799.51	667,625.53	———
	Grand totals	$420,369,798.70	$325,170,778.64	$15,879,006.49	$78,177,077.26	$ 1,142,936.31

Table No. 12

EXPENDITURES FOR PRIMARY HIGHWAY MAINTENANCE WORK SUMMARIZED BY HIGHWAYS

From 1917 to June 30, 1948

Kinds of expenditures are same as included in Table No. 14

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures: By State	By County	By Federal Government	By Miscel. Contributors
1	Pacific, Jct. City-South	$ 3,928,677.46	$ 3,917,031.76	$ 11,645.70	$	$
1E	Pacific, East	2,219,720.25	2,217,218.83	2,501.42		
1W	Pacific, West	1,456,274.01	1,450,076.08	6,197.93		
2	Columbia River	5,853,563.03	5,839,241.27	12,556.40	870.80	894.56
3	Oswego	187,340.85	187,340.85			
4	The Dalles-California	4,898,963.70	4,885,132.42	769.57	13,061.71	
5	John Day	3,043,348.78	3,038,290.79	5,057.99		
6	Old Oregon Trail	5,448,337.17	5,404,596.81	1,228.14	42,512.22	
7	Central Oregon	1,937,756.70	1,934,040.92	15.45	3,700.33	
8	Oregon-Washington	552,151.92	546,800.46	5,351.46		
9	Oregon Coast	7,787,064.03	7,742,453.05	4,501.67	39,109.31	1,000.00
10	Wallowa Lake	1,578,859.36	1,578,859.36			
11	Enterprise-Lewiston	223,030.38	223,030.38			
12	Baker-Homestead	457,612.93	457,416.77	196.16		
13	Baker-Unity	404,176.18	404,176.18			
14	Crooked River	130,840.03	130,840.03			
15	McKenzie	1,596,160.72	1,584,861.21		11,299.51	
16	Santiam	1,465,744.71	1,458,200.55		7,544.16	
17	McKenzie-Bend	249,701.75	246,045.85		3,655.90	
18	Willamette	1,270,942.80	1,270,942.80			
19	Fremont	1,012,542.53	999,450.70		13,091.83	
20	Klamath Falls-Lakeview	1,128,966.87	1,127,317.45		1,649.42	
21	Green Springs	1,224,201.36	1,224,000.59	200.77		
22	Crater Lake	1,199,445.75	1,165,151.39		34,294.36	
23	Dairy-Bonanza	82,354.32	82,354.32			
24	Burns-Crane	149,775.89	149,679.42	96.47		
25	Redwood	496,405.87	496,405.87			
26	Mt. Hood	1,866,432.89	1,855,881.85		10,551.04	
27	Alsea	973,119.64	973,119.64			
28	Pendleton-John Day	1,349,056.61	1,349,056.61			
29	Tualatin Valley	537,185.73	527,192.52	9,993.21		
30	Salem-Dallas	377,952.34	377,899.39	52.95		
31	Albany-Corvallis	110,435.50	109,635.50	800.00		
32	Three Rivers	975,833.33	958,895.88	16,937.45		
33	Corvallis-Newport	1,438,948.12	1,436,357.33	320.50	2,270.29	
34	Siuslaw	963,693.13	952,200.82		11,492.31	
35	Coos Bay-Roseburg	2,097,572.17	2,086,675.89	3,838.17	7,058.11	
36	Pendleton-Cold Springs	200,594.36	200,594.36			
37	Wilson River	857,538.56	857,538.56			
38	Oregon Caves	123,414.11	123,414.11			
39	Salmon River	936,095.08	935,794.16	300.92		
40	Beaverton-Hillsdale	83,117.35	81,377.40	1,739.95		
41	Ochoco	1,341,244.25	1,341,244.25			
42	Sherman	825,389.53	818,082.37		7,307.16	
43	Monmouth-Independence	38,558.24	38,558.24			
44	Wapinitia	635,528.48	635,528.48			
45	Umpqua	525,390.04	525,390.04			
46	Necanicum	543,370.46	543,370.46			
47	Sunset	928,838.67	928,838.67			
48	John Day-Burns	401,415.96	401,415.96			
49	Lakeview-Burns	391,053.24	391,053.24			
50	Klamath Falls-Malin	421,236.98	421,236.98			
51	West Portland-Hubbard	9,235.83	9,235.83			
52	Heppner	696,991.23	692,399.74		4,591.49	
53	Warm Springs	71,406.64	71,406.64			
54	Boardman-Stanfield	33,658.89	33,658.89			
55	Halfway	68,440.19	68,440.19			
	Undistributable to highways	1,998,590.78	1,998,590.78			
	Maintenance supervision	352,788.77	352,788.77			
	Totals	$ 72,158,086.45	$ 71,857,829.66	$ 84,302.28	$ 214,059.95	$ 1,894.56

Table No. 13

EXPENDITURES FOR PRIMARY HIGHWAY CONSTRUCTION WORK SUMMARIZED BY COUNTIES

From 1917 to June 30, 1948

Kinds of expenditures are same as included in Table No. 11

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 6,475,238.88	$ 3,250,387.58	$ 1,007,557.69	$ 2,128,306.82	$ 88,986.79
Benton	3,354,895.97	2,165,834.13	372,439.94	808,001.64	8,620.26
Clackamas	5,936,000.11	3,338,391.13	482,535.78	1,975,066.14	140,007.06
Clatsop	8,736,575.17	4,575,162.85	448,340.54	3,713,071.78	———
Columbia	2,942,758.06	2,447,869.61	12,060.23	481,125.59	1,702.63
Coos	7,321,087.77	4,663,962.45	821,548.46	1,809,902.59	25,674.27
Crook	1,482,891.67	981,393.64	198,071.21	300,926.82	2,500.00
Curry	4,921,665.37	3,357,053.03	227,542.72	1,337,069.62	———
Deschutes	2,727,395.00	1,485,990.90	152,817.14	1,068,633.50	19,953.46
Douglas	12,848,730.10	8,274,497.45	1,213,134.95	3,326,629.18	34,468.52
Gilliam	2,667,074.48	1,594,288.14	266,278.07	804,508.27	2,000.00
Grant	3,821,071.13	1,982,856.66	188,600.65	1,649,613.82	———
Harney	3,415,551.36	1,530,046.52	128,701.27	1,756,803.57	———
Hood River	2,936,199.48	2,490,000.54	283,001.46	128,735.96	34,461.52
Jackson	8,711,260.63	4,841,027.93	523,074.48	3,303,736.04	43,422.18
Jefferson	1,905,307.81	959,973.06	138,482.18	806,112.57	740.00
Josephine	5,712,638.02	3,723,509.24	110,077.78	1,879,051.00	———
Klamath	8,906,747.07	4,695,027.04	696,293.23	3,443,676.69	71,750.11
Lake	3,037,730.99	1,735,611.88	233,414.80	1,068,704.31	———
Lane	11,939,499.74	6,430,784.64	1,784,732.06	3,629,326.85	94,656.19
Lincoln	8,228,234.23	5,713,691.49	220,223.57	2,293,572.20	746.97
Linn	6,907,928.44	3,718,770.46	451,737.03	2,631,609.94	105,811.01
Malheur	4,392,688.59	2,598,223.80	256,725.86	1,507,738.93	30,000.00
Marion	4,353,357.22	1,919,113.17	243,874.79	2,189,298.81	1,070.45
Morrow	1,571,127.11	1,089,594.07	317,758.89	162,014.32	1,759.83
Multnomah	12,579,573.27	7,009,882.22	62,825.83	5,419,718.32	87,146.90
Polk	3,596,916.32	2,036,447.11	155,023.89	1,404,056.22	1,339.10
Sherman	1,727,032.37	740,044.24	273,903.11	711,337.23	1,747.79
Tillamook	5,764,549.88	3,635,186.81	511,286.51	1,582,033.29	36,043.27
Umatilla	7,425,869.10	4,129,755.88	645,928.60	2,623,623.41	26,561.21
Union	3,812,849.76	2,245,733.82	602,607.02	799,187.76	165,321.16
Wallowa	1,869,122.38	1,040,184.90	361,995.78	466,941.70	———
Wasco	6,406,976.32	3,223,465.43	868,761.50	2,304,519.73	10,229.66
Washington	7,794,552.88	5,503,583.24	100,412.78	2,179,303.07	11,253.79
Wheeler	2,577,309.66	1,409,580.73	189,078.49	978,650.44	———
Yamhill	4,243,936.01	2,430,967.25	435,108.76	1,357,725.46	20,134.54
Flight Strips	1,130,373.55	750.97	———	1,129,622.58	———
Undistributed	493,098.96	493,098.96	———	———	———
Totals	$194,675,814.86	$113,461,742.97	$14,985,957.05	$65,159,956.17	$ 1,068,158.67
Primary maintenance	72,158,086.45	71,857,829.66	84,302.28	214,059.95	1,894.56
Secondary construction	22,249,198.74	13,372,869.78	426,015.94	8,427,236.35	23,076.67
Secondary maintenance	14,010,493.85	13,994,155.42	2,418.41	13,920.02	———
County road construction	7,773,364.78	3,673,214.98	361,869.77	3,688,473.62	49,806.41
County road maintenance	1,050,699.99	1,043,250.84	1,643.53	5,805.62	———
General purposes	108,452,140.03	107,767,714.99	16,799.51	667,625.53	———
Grand totals	$420,369,798.70	$325,170,778.64	$15,879,006.49	$78,177,077.26	$ 1,142,936.31

Table No. 14

EXPENDITURES FOR PRIMARY HIGHWAY MAINTENANCE WORK SUMMARIZED BY COUNTIES

From 1917 to June 30, 1948

This table gives the totals of the expenditures made for primary highway maintenance work in each of the several counties during the 32-year period ending June 30, 1948. It includes all expenditures for special maintenance and general maintenance.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 2,595,643.67	$ 2,595,447.51	$ 196.16	$	$ .....
Benton	1,822,706.79	1,822,390.98	315.81	.....	.....
Clackamas	1,826,473.29	1,826,232.32	240.97	.....	.....
Clatsop	2,175,232.17	2,165,541.50	8,796.11	.....	894.56
Columbia	917,627.12	917,627.12	.....	.....	.....
Coos	3,079,866.77	3,042,556.29	6,728.62	30,581.86	.....
Crook	868,709.06	868,709.06	.....	.....	.....
Curry	1,887,864.24	1,883,486.38	205.18	4,172.68	.....
Deschutes	2,267,535.26	2,255,288.91	240.10	12,006.25	.....
Douglas	3,447,806.58	3,443,665.75	4,140.83	.....	.....
Gilliam	1,347,726.04	1,345,426.90	2,299.14	.....	.....
Grant	1,856,072.68	1,853,642.51	2,430.17	.....	.....
Harney	1,170,595.38	1,170,483.46	111.92	.....	.....
Hood River	1,547,832.66	1,537,281.62	.....	10,551.04	.....
Jackson	2,853,971.85	2,815,472.83	4,547.33	33,951.69	.....
Jefferson	922,429.18	916,608.26	.....	5,820.92	.....
Josephine	1,082,689.68	1,081,048.09	1,641.59	.....	.....
Klamath	4,534,049.70	4,526,417.72	48.52	7,583.46	.....
Lake	1,641,840.11	1,627,098.86	.....	14,741.25	.....
Lane	4,111,728.80	4,090,292.82	1,899.06	19,536.92	.....
Lincoln	2,511,683.39	2,505,957.43	320.50	5,405.46	.....
Linn	1,872,902.75	1,864,286.01	2,467.70	6,149.04	.....
Malheur	1,993,133.20	1,992,673.44	459.76	.....	.....
Marion	798,479.04	798,268.63	210.41	.....	.....
Morrow	1,158,838.16	1,151,269.94	2,976.73	4,591.49	.....
Multnomah	1,973,072.52	1,973,072.52	.....	.....	.....
Polk	1,054,691.79	1,054,092.72	599.07	.....	.....
Sherman	950,950.24	943,643.08	.....	7,307.16	.....
Tillamook	2,764,413.11	2,746,355.81	8,779.59	8,277.71	1,000.00
Umatilla	3,488,339.21	3,439,286.69	5,669.50	43,383.02	.....
Union	2,305,474.22	2,304,959.53	514.69	.....	.....
Wallowa	1,007,917.64	1,007,917.64	.....	.....	.....
Wasco	2,436,074.56	2,435,297.95	776.61	.....	.....
Washington	1,038,943.85	1,027,403.10	11,540.75	.....	.....
Wheeler	1,104,166.14	1,102,472.42	1,693.72	.....	.....
Yamhill	1,389,226.05	1,374,774.31	14,451.74	.....	.....
Supervision	352,788.77	352,788.77	.....	.....	.....
Undistributed	1,998,590.78	1,998,590.78	.....	.....	.....
Totals	$72,158,086.45	$71,857,829.66	$ 84,302.28	$ 214,059.95	$ 1,894.56

Table No. 15

EXPENDITURES FOR SECONDARY STATE HIGHWAY CONSTRUCTION WORK SUMMARIZED BY COUNTIES

From 1917 to June 30, 1948

This table gives the totals of the expenditures made for secondary highway construction work in each of the several counties during the 32-year period ending June 30, 1948. It includes expenditures for construction, minor betterments, surveys, rights of way and state expenditures in connection with forest highway work.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 164,754.56	$ 159,561.56	$	$ 5,193.00	$ .....
Benton	465,553.45	373,618.79	2,350.00	89,584.66	.....
Clackamas	1,316,546.46	773,739.35	47,825.95	494,981.16	.....
Clatsop	594,237.60	274,310.73	9,070.98	310,855.89	.....
Columbia	460,558.72	252,789.89	.....	207,768.83	.....
Coos	669,436.03	343,054.18	2,000.00	324,381.85	.....
Crook	561,501.14	342,268.00	34,411.29	184,821.85	.....
Curry	35,772.06	12,892.80	.....	22,879.26	.....
Deschutes	451,983.30	314,414.11	36,245.19	101,324.00	.....
Douglas	527,536.87	432,616.06	.....	94,920.81	.....
Gilliam	363,301.83	289,468.11	.....	73,833.72	.....
Grant	469,780.57	257,752.82	9,086.75	202,941.00	.....
Harney	343,346.53	255,544.93	23,196.60	64,605.00	.....
Hood River	312,436.89	203,484.21	.....	108,952.68	.....
Jackson	748,145.57	626,536.95	.....	121,608.62	.....
Jefferson	367,414.08	180,912.90	.....	186,501.18	.....
Josephine	270,112.15	131,021.54	.....	139,090.61	.....
Klamath	520,667.56	176,611.23	70,558.62	273,497.71	.....
Lake	145,129.74	136,828.29	.....	8,301.45	.....
Lane	1,207,230.83	860,420.53	59,856.49	286,298.47	655.34
Lincoln	789,084.96	516,559.06	.....	272,525.90	.....
Linn	654,306.35	524,626.59	23,000.00	106,679.76	.....
Malheur	2,598,788.40	1,126,457.68	.....	1,472,330.72	.....
Marion	1,340,783.02	852,483.52	.....	465,878.17	22,421.33
Morrow	884,060.65	514,670.98	.....	369,389.67	.....
Multnomah	1,058,712.42	513,338.54	.....	545,373.88	.....
Polk	1,198,981.83	348,787.06	.....	850,194.77	.....
Sherman	223,811.25	204,105.25	.....	19,706.00	.....
Tillamook	228,600.18	206,641.39	.....	21,958.79	.....
Umatilla	1,138,846.79	786,256.72	92,939.72	259,650.35	.....
Union	615,175.91	414,593.91	.....	200,582.00	.....
Wallowa	186,751.15	95,645.25	.....	91,105.90	.....
Wasco	213,113.74	152,926.31	5,461.43	54,726.00	.....
Washington	600,377.30	309,708.13	.....	290,669.17	.....
Wheeler	108,612.72	71,299.72	5,000.00	32,313.00	.....
Yamhill	413,746.13	336,922.69	5,012.92	71,810.52	.....
Totals	$22,249,198.74	$13,372,869.78	$ 426,015.94	$8,427,236.35	$ 23,076.67

Table No. 16

EXPENDITURES FOR SECONDARY HIGHWAY MAINTENANCE WORK SUMMARIZED BY COUNTIES

From 1917 to June 30, 1948

This table gives the totals of the expenditures made for secondary highway maintenance work in each of the several counties during the 32-year period ending June 30, 1948. It includes expenditures for special maintenance and general maintenance.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 328,631.19	$ 328,597.46	$ 33.73	$
Benton	220,830.85	220,830.85		
Clackamas	965,872.43	965,872.43		
Clatsop	550,561.30	544,644.05		5,917.25
Columbia	451,069.37	451,069.37		
Coos	684,258.37	684,258.37		
Crook	237,716.16	237,716.16		
Curry	17,167,98	17,167.98		
Deschutes	280,045.18	280,045.18		
Douglas	439,096.80	439,096.80		
Gilliam	65,679.11	65,679.11		
Grant	68,369.90	68,369.90		
Harney	167,171.14	167,171.14		
Hood River	133,660.88	133,660.88		
Jackson	502,002.90	497,189.78	275.14	4,537.98
Jefferson	28,662.96	28,662.96		
Josephine	175,402.00	173,950.03		1,451.97
Klamath	612,967.21	612,967.21		
Lake	124,582.39	124,582.39		
Lane	933,472.61	933,364.61	108.00	
Lincoln	346,748.66	346,748.66		
Linn	748,557.09	748,577.09		
Malheur	691,142.69	691,142.69		
Marion	718,162.04	718,162.04		
Morrow	281,637.10	281,637.10		
Multnomah	140,341.69	140,341.69		
Polk	595,595.81	595,595.81		
Sherman	80,945.44	80,945.44		
Tillamook	129,338.24	129,338.24		
Umatilla	817,039.89	813,025.53	2,001.54	2,012.82
Union	450,307.27	450,307.27		
Wallowa	133,158.35	133,158.35		
Wasco	65,872.33	65,872.33		
Washington	642,245.89	642,245.89		
Wheeler	149,829.37	149,829.37		
Yamhill	614,924.85	614,924.85		
Supervision	417,426.41	417,426.41		
Totals	$14,010,493.85	$13,994,155.42	$ 2,418,41	$ 13,920.02

Table No. 17

EXPENDITURES FOR COUNTY ROAD AND CITY STREET CONSTRUCTION WORK SUMMARIZED BY COUNTIES

Years 1917 to June 30, 1948

This table gives the totals of expenditures for county road and city street construction work in each of the several counties during the 32-year period ending June 30, 1948. It includes expenditures for construction, minor betterments, surveys, rights of way and state expenditures in connection with forest highway work.

County	Total Amount Expended	Cooperation in Expenditures			
		By State	By County	By Federal Government	By Miscel. Contributors
Baker	$ 152,724.86	$ 104,433.26	$ 14,091.98	$ 34,199.62	$ .....
Benton	161,270.38	135,707.39	.....	25,562.99	.....
Clackamas	317,783.95	200,916.60	24,102.11	92,528.35	236.89
Clatsop	147,592.43	105,690.76	132.79	41,768.88	.....
Columbia	149,759.51	49,741.73	116.36	99,901.42	.....
Coos	205,570.34	38,992.75	.....	166,577.59	.....
Crook	255.24	255.24	.....	.....	.....
Curry	1,346.44	1,346.44	.....	.....	.....
Deschutes	209,304.13	156,736.56	15,551.57	36,366.00	650.00
Douglas	802,866.70	503,294.69	30,495.68	262,076.33	7,000.00
Gilliam	7,936.65	.....	7,936.65	.....	.....
Grant	77.92	77.92	.....	.....	.....
Harney	.....	.....	.....	.....	.....
Hood River	324.09	324.09	.....	.....	.....
Jackson	297,552.34	70,638.48	10,878.40	216,035.46	.....
Jefferson	26,980.74	3,107.85	3,800.00	20,072.89	.....
Josephine	137,217.83	125,143.83	.....	12,074.00	.....
Klamath	580,871.67	188,470.16	15,575.07	373,805.06	3,021.38
Lake	159,570.77	42,557.66	23,287.43	92,700.00	1,025.68
Lane	203,509.98	172,693.97	22,536.52	6,582.83	1,696.66
Lincoln	5,206.30	3,869.23	.....	1,337.07	.....
Linn	162,211.64	78,632.43	44,081.21	39,498.00	.....
Malheur	65,281.51	20,544.93	13,996.58	30,740.00	.....
Marion	514,413.74	387,067.61	22,600.20	104,745.93	.....
Morrow	2,515,77	2,515.77	.....	.....	.....
Multnomah	1,538,023.59	244,694.57	5,701.90	1,275,810.12	11,817.00
Polk	94,632.02	39,411.22	2,104.80	53,116.00	.....
Sherman	155,449.54	78,161.62	419.50	76,868.42	.....
Tillamook	198,761.16	84,335.85	33,426.77	78,892.98	2,105.56
Umatilla	77,715.94	39,391.66	7,018.70	31,305.58	.....
Union	97,837.69	43,899.74	.....	53,937.95	.....
Wallowa	98,442.20	44,616.60	10,770.60	43,055.00	.....
Wasco	327,147.47	169,882.13	21,933.27	135,332.07	.....
Washington	486,819.84	291,927.67	14,322.79	180,569.38	.....
Wheeler	97,966.00	81,575.00	.....	16,391.00	.....
Yamhill	288,424.40	162,559.57	16,988.89	86,622.70	22,253.24
Totals	$7,773,364.78	$3,673,214.98	$ 361,869.77	$3,688,473.62	$ 49,806.41

Table No. 18

EXPENDITURES FOR COUNTY ROAD AND CITY STREET MAINTENANCE WORK SUMMARIZED BY COUNTIES

To June 30, 1948

This tables gives the total expenditures for maintenance work on highways and city streets that are not on the state highway system. It includes expenditures for maintenance of county road signs, prior maintenance of sections of state highways which have been abandoned, and maintenance of city streets.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 115,380.85	$ 114,820.96	$ 559.89	$
Benton	26,401.61	26,401.61		
Clackamas	38,783.89	38,783.89		
Clatsop	30,970.46	30,970.46		
Columbia	11,634.21	11,634.21		
Coos	19,261.61	16,948.59		2,313.02
Crook	2,060.93	2,060.93		
Curry	1,244.81	1,244.81		
Deschutes	10,798.78	10,798.78		
Douglas	39,396.35	38,753.96	642.39	
Gilliam	2,102.87	2,102.87		
Grant	2,765.95	2,765.95		
Harney	2,140.65	2,140.65		
Hood River	7,540.36	7,540.36		
Jackson	76,028.72	76,028.72		
Jefferson	6,412.65	6,412.65		
Josephine	41,730.58	41,730.58		
Klamath	81,834.15	81,834.15		
Lake	11,606.37	11,606.37		
Lane	64,784.41	64,784.41		
Lincoln	5,052.50	5,052.50		
Linn	81,684.99	81,272.23	412.76	
Malheur	7,443.47	7,443.47		
Marion	72,165.58	72,165.58		
Morrow	4,210.96	4,210.96		
Multnomah	61,770.22	61,770.22		
Polk	102,125.73	102,125.73		
Sherman	2,377.38	2,377.38		
Tillamook	7,846.88	4,421.75		3,425.13
Umatilla	46,158.82	46,062.86	28.49	67.47
Union	9,738.86	9,738.86		
Wallowa	3,859.09	3,859.09		
Wasco	9,225.99	9,225.99		
Washington	22,819.38	22,819.38		
Wheeler	828.36	828.36		
Yamhill	18,315.87	18,315.87		
Undistributed	2,195.70	2,195.70		
Totals	$ 1,050,699.99	$ 1,043,250.84	$ 1,643.53	$ 5,805.62

Table No. 19

FOREST HIGHWAY EXPENDITURES ON STATE HIGHWAY ROUTES CLASSIFIED BY COUNTIES

Years 1917 to 1947, Inclusive

In this table are given the expenditures that have been made in connection with forest highway construction work on the state highway system. This work was supervised by the United States Public Roads Administration, and the amounts of Federal Government expenditures and county expenditures here shown are as reported by that bureau. The state expenditures shown are also included in the foregoing tables Nos. 11, 15 and 17, but the Federal Government and county expenditures are not included in those tables. For a classification of these expenditures by highways see table No. 20.

County	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
Baker	$ 186,357.66	$ 44,845.60	$ 584.00	$ 140,928.06
Clackamas	1,082,459,83	525,124.95	.....	557,334.88
Coos	231,790.61	.....	83,000.00	148,790.61
Crook	505,553.46	39,634.17	26,875.00	439,044.29
Curry	526,330.36	116,289.11	30,000.00	380,041.25
Deschutes	364,154.83	144,378.47	5,000.00	214,776.36
Douglas	1,979,741.88	397,798.62	275,054.98	1,306,888.28
Grant	2,070,951.22	159,639.74	250,046.25	1,661,265.23
Harney	406,833.59	.....	65,000.00	341,833.59
Hood River	756,801.96	314,844.19	.....	441,957.77
Jackson	1,399,717.10	296,095.20	3,438.81	1,100,183.09
Jefferson	350,725.39	56,000.00	13,000.00	281,725.39
Josephine	504,894.27	294,433.59	17,522.99	192,937.69
Klamath	1,059,276.67	209,114.95	179,954.97	670,206.75
Lake	1,008,100.82	227,455.92	.....	780,644.90
Lane	5,697,824.01	1,488,575.43	312,500.00	3,896,748.58
Lincoln	3,165,574.42	889,652.93	315,000.00	1,960,921.49
Linn	2,552,497.67	.....	202,014.00	2,350,483.67
Marion	1,170,195.35	300,000.00	173,586.00	696,609.35
Morrow	140,057.14	.....	75,000.00	65,057.14
Multnomah	304,707.30	52,500.00	.....	252,207.30
Tillamook	1,052,580.61	328,153.51	18,624.69	705,802.41
Umatilla	848,192.47	155,287.23	145,718.32	547,186.92
Union	437,389.42	.....	.....	437,389.42
Wallowa	559,611.90	67,951.65	39,210.35	452,449.90
Wasco	570,024.86	180,844.08	25,000.00	364,180.78
Wheeler	569,395.60	105,060.12	29,900.00	434,435.48
Totals	$29,501,740.40	$ 6,393,679.46	$ 2,286,030.36	$20,822,030.58

Table No. 20

FOREST HIGHWAY EXPENDITURES ON STATE HIGHWAY ROUTES CLASSIFIED BY HIGHWAYS

Years 1917 to 1947, Inclusive

In this table are given the expenditures that have been made in connection with forest highway construction work on the state highway system. This work was supervised by the United States Public Roads Administration, and the amounts of Federal Government expenditures and county expenditures here shown are as reported by that bureau. The state expenditures shown are also included in the foregoing tables Nos. 11, 15 and 17, but the Federal Government and county expenditures are not included in those tables. For a classification of these expenditures by counties see table No. 19.

Hwy. No.	Highway	Total Amount Expended	Cooperation in Expenditures		
			By State	By County	By Federal Government
1	Pacific, Jct. City-South	$ 310,731.65	$ 182,776.86	$ 23,000.00	$ 104,954.79
2	Columbia River	562,156.25	117,500.00	.....	444,656.25
4	The Dalles-California	648,505.02	178,806.28	149,592.81	320,105.93
5	John Day	726,048.14	174,485.34	162,110.76	389,452.04
9	Oregon Coast	3,489,313.37	1,068,915.37	233,000.00	2,187,398.00
11	Enterprise-Lewiston	439,649.98	67,951.65	39,210.35	332,487.98
15	McKenzie	898,606.12	429,278.06	20,000.00	449,328.06
16	Santiam	2,119,112.44	56,000.00	131,000.00	1,932,112.44
18	Williamette	2,349,114.66	196,000.00	37,500.00	2,115,614.66
19	Fremont	357,494.37	879.37	.....	356,615.00
20	Klamath Falls-Lakeview	706,675.27	226,919.50	.....	479,755.77
22	Crater Lake	691,486.47	301,060.92	26,300.97	364,124.58
25	Redwood	194,160.63	130,121.32	9,522.99	54,516 32
26	Mt. Hood	1,239,533.23	566,436.42	.....	673,096.81
27	Alsea	1,034,550.49	410,818.40	165,000.00	458,732.09
28	Pendleton-John Day	1,346,636.88	185,287.23	202,218.32	959,131.33
32	Three Rivers	423,943.55	149,528.51	18,624.69	255,790.35
34	Siuslaw	1,962,790.55	708,521.94	260,000.00	994,268.61
38	Oregon Caves	310,733.64	164,312.27	8,000.00	138,421.37
39	Salmon River	1,034,305.79	180,000.00	.....	854,305.79
41	Ochoco	747,731.27	144,694.29	31,775.00	571,261.98
44	Wapinitia	772,332.88	281,376.80	25,000.00	465,956.08
45	Umpqua	323,273.90	.....	128,001.65	195,272.25
48	John Day-Burns	1,293,655.56	.....	97,019.49	1,196,636.07
53	Warm Springs	31,971.59	.....	.....	31,971.59
162	North Santiam	2,023,364.57	300,000.00	257,600.00	1,465,764.57
181	Siletz	147,634.94	.....	30,000.00	117,634.94
230	Tiller-Trail	1,051,856.07	58,333.33	124,053.33	869,469.41
232	Crater Lake-North	70,669.32	.....	.....	70,669.32
233	West Diamond Lake	638,536.94	.....	.....	638,536.94
321	Heppner-Spray	467,274.93	.....	100,000.00	367,274.93
330	Weston-Elgin	583,383.78	.....	.....	583,383.78
350	Little Sheep Creek	119,961.92	.....	.....	119,961.92
421	Klamath Lake	7,683.46	.....	.....	7,683.46
424	Sand Creek	53,314.04	.....	.....	53,314.04
425	East Diamond Lake	209,871.13	.....	7,500.00	202,371.13
	Timberline (State Coop.)	108,000.00	108,000.00	.....	.....
	Cascade Lakes (State Coop.)	5,675.60	5,675.60	.....	.....
	Totals	$29,501,740.40	$ 6,393,679.46	$ 2,286,030.36	$20,822,030.58

Table No. 21

STATISTICS PERTAINING TO FOREST HIGHWAY WORK ON STATE HIGHWAYS

The statistics here given apply to highway work in the State of Oregon performed under the supervision of the Public Roads Administration. All of the work included is upon state highways at points where these highways are in or adjacent to National Forests. The work is financed under cooperative agreements between the federal government, the state, and the counties of the state, the federal funds being Oregon's proportionate share of funds annually appropriated by Congress for forest road work.

The amounts of county and federal government expenditures here given, and the mileages of work performed, are as reported by the Public Roads Administration. The amounts of state expenditures are as shown by the disbursement records of the State Highway Commission.

EXPENDITURES ON FOREST HIGHWAY WORK

Year	Total Amount Expended	Cooperation in Expenditures		
		By State	By County	By Federal Government
1918–1919–1920	$ 1,568,432.01	$ 809,261.58	$ 102,271.45	$ 656,898.98
1921–1922	1,630,589.13	724,970.53	67,142.21	838,476.39
1923–1924	3,788,011.33	1,092,660.31	725,942.05	1,969,408.97
1925–1926	2,068,546.50	759,762.58	481,431.18	827,352.74
1927	789,771.22	147,859.76	170,611.36	471,300.10
1928	614,910.84	103,084.09	75,263.79	436,562.96
1929	677,063.92	82,000.00	42,000.00	553,063.92
1930	1,467,833.88	696,986.98	108,050.00	662,796.90
1931	3,119,616.33	653,385.58	258,000.00	2,208,230.75
1932	778,423.67	202,700.00	41,474.39	534,249.28
1933	1,845,651.90	138,913.87	211,586.74	1,495,151.29
1934	2,135,663.35	28,416.93	Cr. 1,000.00	2,108,246.42
1935	1,097,416.83	52,501.65	Cr. 2,842.81	1,047,757.99
1936	1,167,044.72	205,000.00	.....	962,044.72
1937	1,513,778.74	112,500.00	.....	1,401,278.74
1938	944,053.77	Cr. 25,000.00	6,100.00	962,953.77
1939	995,602.57	35,000.00	.....	960,602.57
1940	580,947.92	.....	.....	580,947.92
1941	591,941.05	285,500.00	.....	306,441.05
1942	237,410.05	.....	.....	237,410.05
1943	15,781.87	Cr. 36,824.40	.....	52,606.27
1944	37,036.29	.....	.....	37,036.29
1945	116,994.79	.....	.....	116,994.79
1946	177,327.93	100,000.00	.....	77,327.93
1947	1,541,889.79	225,000.00	.....	1,316,889.79
Totals	$29,501,740.40	$ 6,393,679.46	$ 2,286,030.36	$20,822,030.58

Table No. 21—Continued

MILEAGES OF FOREST HIGHWAY WORK COMPLETED ON STATE HIGHWAY SYSTEM

Year	Concrete Pavement (Miles)	Bituminous Macadam (Miles)	Oiled Surfacing (Miles)	Unoiled Surfacing (Miles)	Graded Only (Miles)
1918	.....	.....	.....	.....	4.30
1919	.....	.....	.....	.....	62.90
1920	.....	.....	.....	22.59	56.10
1921	.....	.....	.....	38.24	20.68
1922	.....	.....	.....	22.37	15.69
1923	.....	.....	.....	87.92	61.00
1924	.....	.....	.....	74.62	153.37
1925	.....	.....	.....	99.94	50.70
1926	.....	.....	.....	41.41	52.32
1927	.....	.....	.....	53.50	39.80
1928	.....	.....	.....	17.60	23.80
1929	.....	.....	.....	6.00	19.00
1930	.....	.....	.....	25.88	30.35
1931	.....	.....	.....	21.35	61.29
1932	.....	.....	.....	28.36	14.61
1933	.....	24.94	.....	74.31	28.33
1934	.....	24.65	53.51	18.08	19.65
1935	.....	.....	30.71	.....	8.38
1936	.....	.....	.....	43.59	41.84
1937	0.18	37.26	23.22	41.73	17.85
1938	.....	8.36	7.10	23.31	23.04
1939	.....	16.89	20.69	37.78	8.55
1940	.....	6.07	40.34	46.41	25.00
1941	.....	.....	.....	7.63	.....
1942	.....	5.21	3.87	16.72	13.03
1943	.....	5.24	.....	5.24	5.24
1944	.....	.....	.....	.....	.....
1945	.....	0.29	.....	0.29	0.29
1946	.....	.....	.....	.....	.....
1947	.....	.....	.....	.....	6.42
Totals	0.18	128.91	179.44	854.87	863.53

	3,941,048.54
	3,653,093.85
	14,941,238.02
	7,826,621.69
5	5,899,973.37
	10,566,865.28
	1,533,716.25
	1,114,520.54
	1,558,244.48
10	9,498,944.44
	1,832,246.63
	1,602,581.00
	1,700,038.30
	2,184,103.02
15	7,798,111.94
	741,434.33
	2,677,674.67
	7,518,920.78
	1,880,970.42
20	14,689,642.70
	3,891,426.45
	11,647,520.23
	2,255,869.49
	13,266,929.01
25	2,906,948.99
	42,598,327.31
	4,007,404.17
	1,918,315.32
	5,781,453.30
30	7,884,875.19
	5,105,277.44
	2,777,564.14
	5,405,672.26
	9,612,877.96
	1,108,884.19
36	5,695,539.20
	229,024,874.90
	229,024,874.90

Co. Dist for
Road Purposes
1917 to 1947 Inc

Total

Taken from old reports
9-1-49

1	3941049
2	3653094
3	14941238
4	7826622
5	5899973
6	10566865
7	1533716
8	1114521
9	1558245
10	9498945
11	1832247
12	1602581
13	1700038
14	2184103
15	7798112
16	7414334
17	2677575
18	7518921
19	1880970
20	14689643
21	3891427
22	11647520
23	2255870
24	13266929
25	2906949
26	42598327
27	4007404
28	1918315
29	5781453
30	7884875
31	5105277
32	2777564
33	5405672
34	9612878
35	1108884
36	5695539

229,024,8754

Given to Ralph Nelson

Table No. 22

COUNTY DISBURSEMENTS FOR ROAD PURPOSES

1943 to 1947, Inclusive

County	1943	1944	1945	1946	1947
Baker	$ 25,081.13	$ 72,466.70	$ 130,819.74	$ 107,759.99	$ 132,633.91
Benton	72,013.73	93,253.82	130,961.69	182,608.43	233,622.95
Clackamas	185,000.00*	248,259.40	341,798.50	476,406.44	360,476.08
Clatsop	68,034.09	105,664.92	143,638.01	188,217.63	230,681.23
Columbia	130,337.11	152,191.29	162,741.04	218,805.55	200,193.34
Coos	120,912.36	148,331.09	174,641.51	258,791.16	502,735.07
Crook	28,855.11	35,346.34	24,781.71	29,247.65	35,384.07
Curry	15,121.12	20,000.00*	20,000.00*	86,779.60	93,011.54
Deschutes	21,170.00	32,076.60	26,899.88	101,982.71	111,696.84
Douglas	257,029.75	310,735.87	281,157.01	384,141.62	619,343.94
Gilliam	19,283.26	25,000.00*	25,000.00*	95,563.00	50,000.00*
Grant	24,612.60	44,741.06	58,733.77	106,750.35	73,234.50
Harney	34,088.06	46,563.99	33,334.76	96,097.79	87,837.79
Hood River	49,673.44	50,000.00*	50,000.00*	81,678.82	99,912.65
Jackson	139,250.87	161,086.01	158,129.07	328,663.37	546,832.82
Jefferson	16,398.82	20,543.31	36,433.68	39,142.74	25,567.61
Josephine	66,398.44	67,940.59	95,898.07	116,321.16	112,626.47
Klamath	130,000.00*	266,600.00	295,850.00	443,584.18	467,699.23
Lake	50,000.00*	45,000.00*	45,000.00*	50,000.00*	50,000.00*
Lane	410,910.17	421,867.57	574,540.99	750,234.74	809,104.77
Lincoln	35,740.25	119,195.69	85,872.01	175,775.62	189,334.28
Linn	269,492.68	274,005.52	337,777.79	377,869.23	495,691.07
Malheur	20,265.35	98,995.28	141,674.05	64,809.24	54,299.65
Marion	129,895.42	253,532.65	253,532.65	297,897.43	412,820.23
Morrow	33,224.81	43,664.57	44,387.60	73,896.60	81,180.38
Multnomah	835,286.02	629,341.28	800,524.55	2,293,652.00	1,835,404.00
Polk	133,839.74	166,051.57	166,475.30	162,828.27	209,725.75
Sherman	25,130.91	18,203.63	32,727.55	48,987.34	79,050.49
Tillamook	106,163.26	100,000.00*	100,000.00*	270,795.86	408,750.28
Umatilla	150,336.12	190,688.29	189,894.26	235,615.15	370,067.79
Union	72,866.86	95,161.66	128,829.00	150,574.57	137,746.15
Wallowa	41,511.73	56,318.47	61,921.80	132,159.45	107,362.04
Wasco	67,937.87	83,456.44	109,495.91	174,647.58	170,761.65
Washington	234,379.22	250,649.46	315,484.35	325,032.68	401,203.13
Wheeler	10,000.00*	12,000.00*	12,000.00*	15,000.00*	15,000.00*
Yamhill	167,043.62	150,000.00*	150,000.00*	164,544.85	182,912.92
Totals	$4,197,283.92	$4,908,933.07	$5,740,956.25	$9,106,862.80	$9,993,904.62

* These are estimated expenditures, as no reports were received from the counties.

Table No. 23

STATE HIGHWAY BOND INDEBTEDNESS ACCOUNT

Calendar Year	Annual Principal	Annual Interest	Annual Total	Bonds Outstanding At End of Year
1917	$	$ 5,000.00	$ 5,000.00	$ 1,400,000.00
1918		72,900.00	72,900.00	2,840,000.00
1919		141,099.99	141,099.99	10,140,000.00
1920		503,725.00	503,725.00	19,140,000.00
1921		974,870.83	974,870.83	30,700,000.00
1922	125,000.00	1,521,266.67	1,646,266.67	36,075,000.00
1923	179,750.00	1,742,150.00	1,921,900.00	38,395,250.00
1924	334,500.00	1,824,240.00	2,158,740.00	38,060,750.00
1925	3,797,000.00	1,799,267.05	5,596,267.05	37,263,750.00
1926	1,197,000.00	1,722,761.65	2,919,761.65	36,066,750.00
1927	1,600,000.00	1,663,215.87	3,263,215.87	34,466,750.00
1928	1,750,000.00	1,586,060.99	3,336,060.99	32,716,750.00
1929	1,825,000.00	1,503,578.47	3,328,578.47	30,891,750.00
1930	1,925,000.00	1,418,314.70	3,343,314.70	30,466,750.00
1931	1,975,000.00	1,386,522.18	3,361,522.18	29,491,750.00
1932	2,975,000.00	1,369,435.06	4,344,435.06	27,516,750.00
1933	1,975,000.00	1,290,992.54	3,265,992.54	27,041,750.00
1934 ①	2,175,000.00	1,250,010.02	3,425,010.02	25,866,750.00
1935 ①	5,675,000.00	1,225,541.73 ②	6,900,541.73	25,691,750.00
1936 ①	2,950,000.00	1,089,213.37	4,039,213.37	23,441,750.00
1937 ③	2,800,000.00	984,228.06	3,784,228.06	21,641,750.00
1938 ③	3,550,000.00	877,764.27	4,427,764.27	18,841,750.00
1939	2,000,000.00	776,394.23	2,776,394.23	16,841,750.00
1940	2,075,000.00	683,724.19	2,758,724.19	14,766,750.00
1941	2,150,000.00	589,085.40	2,739,085.40	12,616,750.00
1942	2,125,000.00	493,790.36	2,618,790.36	10,491,750.00
1943	2,070,250.00	399,995.32	2,470,245.32	8,421,500.00
1944	1,915,500.00	308,610.28	2,224,110.28	6,506,000.00
1945	1,453,000.00	227,913.99	1,680,913.99	5,053,000.00
1946	1,053,000.00	166,998.95	1,219,998.95	4,000,000.00
1947	650,000.00	126,765.80	776,765.80	3,350,000.00
1948	500,000.00	104,109.53	604,109.53	2,850,000.00
1949	425,000.00	86,797.01	511,797.01	2,425,000.00
1950	325,000.00	72,171.99	397,171.99	2,100,000.00
1951	275,000.00	62,046.97	337,046.97	1,825,000.00
1952	275,000.00	52,984.45	327,984.45	1,550,000.00
1953	275,000.00	43,921.93	318,921.93	1,275,000.00
1954	275,000.00	34,859.41	309,859.41	1,000,000.00
1955	275,000.00	25,796.89	300,796.89	725,000.00
1956	200,000.00	17,531.25	217,531.25	525,000.00
1957	150,000.00	12,187.50	162,187.50	375,000.00
1958	150,000.00	8,437.50	158,437.50	225,000.00
1959	150,000.00	4,687.50	154,687.50	75,000.00
1960	75,000.00	937.50	75,937.50	
	$55,650,000.00	$30,251,906.40	$85,901,906.40	
Less refunding and temporary financing bonds	11,450,000.00		11,450,000.00	
Totals ①	$44,200,000.00	$30,251,906.40	$74,451,906.40	

① Includes Coast Bridge short-term bonds.

② Includes $4,866.50 refund to cover accrued interest paid by Ladd & Bush, Bankers, on Coast Bridge bonds.

③ Includes retirement of 1937 and 1938 short-term bonds.

Table No. 24

STATE HIGHWAY BONDS ISSUED, 1917 TO 1948

Year	Par Value of Bonds Sold: Long-term Construction Bonds	Par Value of Bonds Sold: Short-term Bonds for Temporary Financing	Time for Retirement	Bonds Retired Same Year
1917	$ 400,000	$	8 years	$ .....
	1,000,000	.....	25 years	.....
1918	1,440,000	.....	25 years	.....
1919	800,000	.....	14 years	.....
	6,500,000	.....	25 years	.....
1920	9,000,000	.....	25 years	.....
1921	.....	3,000,000①	4 years	.....
	8,560,000	.....	25 years	.....
1922	5,500,000	.....	25 years	125,000
1923	2,500,000	.....	25 years	179,750
1924	.....	.....	.....	334,500
1925	3,000,000	.....	25 years	3,797,000
1926	.....	.....	.....	1,197,000
1927	.....	.....	.....	1,600,000
1928	.....	.....	.....	1,750,000
1929	.....	.....	25 years	1,825,000
1930	1,500,000②	.....	25 years	1,925,000
1931	1,000,000③	.....	25 years	1,975,000
1932	.....	1,000,000④	6 months	2,975,000
1933	.....	1,500,000⑤	5 years	1,975,000
1934	.....	1,000,000⑥	1 year	2,175,000
1935	3,000,000⑦	.....	25 years	3,175,000
	.....	1,000,000⑥	6 months	1,000,000
	.....	1,500,000⑥	10 days	1,500,000
1936	.....	700,000⑥	10 days	2,950,000
1937	.....	1,000,000⑧	6 months	2,800,000⑨
1938	.....	750,000⑧	8 months	3,550,000⑩
1939	.....	.....	.....	2,000,000
1940	.....	.....	.....	2,075,000
1941	.....	.....	.....	2,150,000
1942	.....	.....	.....	2,125,000
1943	.....	.....	.....	2,070,250
1944	.....	.....	.....	1,915,500
1945	.....	.....	.....	1,453,000
1946	.....	.....	.....	1,053,000
1947	.....	.....	.....	650,000
1948	.....	.....	.....	500,000
Totals	$44,200,000	$11,450,000	.....	$52,800,000
Bonds retired	41,350,000	11,450,000	.....	52,800,000
Bonds outstanding end of 1948	$ 2,850,000	$	.....	$ .....

① Account of unfavorable bond market, $3,000,000 of 4-year bonds were sold with intention to refund in 1925 with long-term bonds at lower interest rate.

② This bond sale made to enable state to match available federal aid.

③ This bond sale made to finance state relief labor program.

④ This sale of 6-months bonds was made to overcome a deficit caused by change in date of licensing cars from January 1st to July 1st.

⑤ This sale of 5-year bonds was made to finance state relief program.

⑥ These sales of short-term bonds made to finance the construction of the five Oregon Coast bridges.

⑦ This sale was made to refund a like amount of Oregon Coast Bridge bonds, resulting in a saving of interest.

⑧ These sales of short-term bonds were made to enable the State to utilize its winter income in carrying on its federal aid program during the preceding summer construction season.

⑨ Includes $500,000 of 1937 short-term bonds retired December 31, 1937.

⑩ Includes $500,000 of 1937 short-term bonds retired January 31, 1938, and $750,000 of 1938 short-term bonds retired December 31, 1938.

Table No. 25

COUNTY BOND AND WARRANT INDEBTEDNESS IN CONNECTION WITH ROADS AND BRIDGES

July 1, 1948

The information contained in this table was compiled by the State Treasurer.

County	Bonds Outstanding	Road Warrants Outstanding	Total Road and Bridge Debt	Sinking Fund or Cash on Hand	Net Road and Bridge Debt
Baker	$	$	$	$	$
Benton					
Clackamas					
Clatsop					
Columbia					
Coos	12,000.00		12,000.00	9,000.00	3,000.00
Crook					
Curry					
Deschutes					
Douglas					
Gilliam	67,000.00		67,000.00	67,000.00	
Grant	101,000.00		101,000.00	19,609.84	81,390.16
Harney					
Hood River					
Jackson	4,000.00		4,000.00	4,000.00	
Jefferson					
Josephine					
Klamath	64,000.00		64,000.00	64,000.00	
Lake					
Lane		11,220.77	11,220.77	4,158.96	7,061.81
Lincoln					
Linn					
Malheur					
Marion					
Morrow	131,500.00		131,500.00	29,968.96	101,531.04
Multnomah	4,946,000.00		4,946,000.00	486,677.72	4,459,322.28
Polk					
Sherman					
Tillamook					
Umatilla	600,000.00		600,000.00	150,000.00	450,000.00
Union					
Wallowa					
Wasco					
Washington					
Wheeler	65,000.00		65,000.00	41,714.57	23,285.43
Yamhill					
Totals	$5,990,500.00	$ 11,220.77	$6,001,720.77	$ 876,130.05	$5,125,590.72

1970 to 6-30-49

*

871655 32
1145831 55
3015098 98
1278400 95
1042699 51

1673626 59
2693337 36
2204470 3
1022168 02
1557639 92

2045549 4
3344369 7
2899707 0
6829072 0
2439771 97

1349251 0
9360091 6
2183373 021
3524250 8
3890408 52

6257600 47
1867799 94
8242369 7
4122400 25
2911484 8

21625851 67
10089003 1
2106743 3
7872849 2
17947300 7

9905909 6
3692773 6
8152799 8
21990295 0
1446831 02
15473616 4

627711010 5*

9-5-49

	1920 - 1947 (Income)	From income of 1948
1	776540 86	64356 31
2	998857 25	98360 01
3	2605919 54	277123 10
4	1127832 56	101911 58
5	917385 77	85387 26
6	14695277 3	135149 24
7	2267800 60	280047 9
8	1883888 16	215084 8
9	900665 58	81716 29
10	13025443 2	168128 25
11	1850601 9	130224 8
12	2906888 09	290991 1
13	2549036 4	232494 4
14	6056339 4	527065 71
15	21072136 4	2233717 9
16	1137159 1	132910 8
17	7828265 5	1031352 4
18	19214967 7	1781960 4
19	3083458	297656 7
20	32825466 4	4056864 9
21	5177437 6	725936 0
22	15849931 2	1887911 2
23	6888016 1	912468 7
24	36219553 5	3385744 7
25	2588198 8	216676 5
26	92916640 5	16009887 4
27	8747475 6	911772 4
28	1909184 5	131816 5
29	6864608 9	670423 8
30	15691850 6	1512457 8
31	8851648 4	717389 2
32	3251436 8	293478 3
33	7295618 7	579196 8
34	18954821 0	2036142 5
35	1290031 2	104856 3
36	13481959 4	1355869 6
	54,954,714.00	5278371 37

Table No. 26

APPORTIONMENT OF MOTOR VEHICLE FEES TO COUNTIES
1920 to 1948, Inclusive

Prior to 1917, the total net revenues from motor vehicle license fees were reverted to the counties; from 1917 to 1919, inclusive, the entire net fees were reverted to the state highway fund; from 1920 to January 1, 1930, inclusive, one-quarter of the net fees were apportioned to the counties, and three-quarters to the state highway fund; and from January 1, 1930, to June 30, 1933, one-third of the net fees were apportioned to the counties and two-thirds to the state highway fund. The net revenues from motor transportation fees, from the beginning of the act authorizing the collection of such fees in 1927, to June 30, 1933, were apportioned one-quarter to the counties and three-quarters to the state highway fund. Subsequent to June 30, 1933, the entire net revenues from both sources were deposited into the state highway fund. During the four-year period from 1933 to 1936, the counties received $1,600,000 yearly. During the ten-year period from 1937 to 1946 the yearly apportionment was increased to 15.7 per cent of the total state highway income, but to be not less than $2,000,000. Beginning with the year 1947 the yearly apportionment was ~~again~~ increased to 19 per cent of the total state highway income. This table gives the total apportionments to the end of the calendar year 1948. 1950

County	Total Apportionment 1920 to 1946	Apportionment Calendar Year 1947	Apportionment Calendar Year 1948	Total Apportionment 1920 to 1948
Baker	$ 699,104.74	$ 62,623.48	$ 61,523.15	$ 823,251.37
Benton	883,041.44	93,508.45	93,698.13	1,070,248.02
Clackamas	2,246,546.40	291,363.55	269,148.57	2,807,058.52
Clatsop	1,002,128.96	101,963.19	97,708.95	1,201,801.10
Columbia	808,809.69	87,977.66	82,573.43	979,360.78
Coos	1,310,253.56	128,767.62	128,599.35	1,567,620.53
Crook	192,968.16	27,348.98	26,789.64	247,106.78
Curry	162,742.04	20,610.36	20,646.85	203,999.25
Deschutes	796,473.34	84,306.33	79,196.49	959,976.16
Douglas	1,119,620.99	147,632.81	157,319.84	1,424,573.64
Gilliam	168,099.70	13,716.71	12,695.84	194,512.05
Grant	256,275.70	27,849.83	27,683.01	311,808.54
Harney	228,332.79	21,406.51	22,039.04	271,778.34
Hood River	541,034.04	52,165.85	50,689.16	643,889.05
Jackson	1,841,808.78	214,307.92	213,222.62	2,269,339.32
Jefferson	99,831.03	11,144.67	12,387.02	123,362.72
Josephine	660,748.07	98,279.14	98,656.03	857,683.24
Klamath	1,695,251.97	183,087.24	172,494.19	2,050,833.40
Lake	272,354.12	29,185.14	28,410.57	329,949.83
Lane	2,806,873.93	383,981.64	386,142.76	3,576,998.33
Lincoln	432,190.75	68,937.67	69,304.57	570,432.99
Linn	1,361,560.80	180,931.01	179,527.97	1,722,019.78
Malheur	581,119.13	86,942.10	86,968.35	755,029.58
Marion	3,204,494.05	337,548.02	325,654.33	3,867,696.40
Morrow	230,636.31	22,882.63	21,027.56	274,546.50
Multnomah	17,202,147.28	1,697,903.12	1,553,628.78	20,453,679.18
Polk	761,490.79	91,873.53	87,560.68	940,925.00
Sherman	173,991.24	13,723.61	12,770.98	200,485.83
Tillamook	605,914.63	65,133.61	64,072.74	735,120.98
Umatilla	1,383,392.01	150,357.88	145,211.01	1,678,960.90
Union	794,097.70	73,760.72	69,374.66	937,233.08
Wallowa	289,711.63	28,681.98	28,051.05	346,444.66
Wasco	658,415.79	57,595.05	55,589.77	771,600.61
Washington	1,632,719.22	212,924.89	197,623.44	2,043,267.55
Wheeler	116,792.36	9,944.67	9,876.67	136,613.70
Yamhill	1,176,914.32	138,583.98	131,108.14	1,446,606.44
Totals	$48,397,887.46	$ 5,318,951.55	$ 5,078,975.14	$58,795,814.15

Table No. 27

APPORTIONMENT OF MOTOR VEHICLE REVENUES TO CITIES—1944 TO 1948, INCLUSIVE

Beginning with the calendar year 1944, the cities have annually received a portion of the state highway income from motor vehicle fees, motor transportation fees, gasoline tax, and fines for traffic law violations. During the years 1944 to 1947, the cities received five (5) per cent of the state highway income, and beginning with the year 1948 they have received ten (10) per cent of the income. The apportionments is made on February first for the prior year's income, and is distributed in proportion to population, with the provision that a city of over 100,000 population receives an apportionment computed on two-thirds of its population. Payments are made only to incorporated cities having functioning city governments.

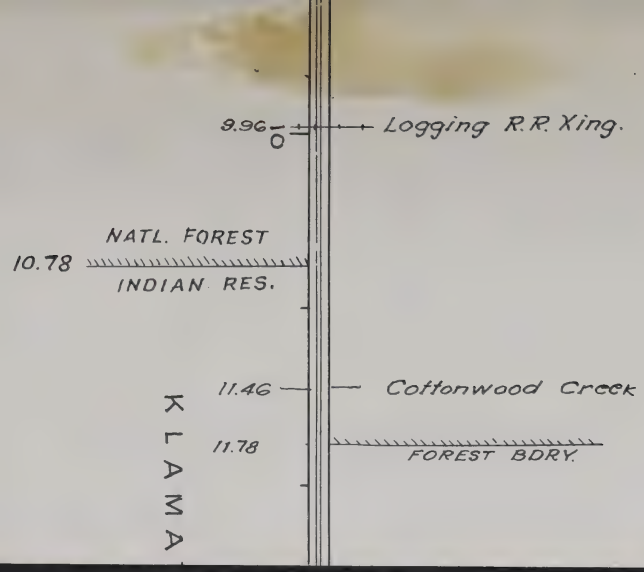
City	County	Total 1944 to 1946	1947	1948	Total 1944 to 1948
Adams	Umatilla	$ 722.17	$ 338.95	$ 722.66	$ 1,783.78
Albany	Linn	24,160.63	11,339.75	24,176.99	59,677.37
Amity	Yamhill	2,328.89	1,093.06	2,330.47	5,752.42
Antelope	Wasco	384.59	180.51	384.85	949.95
Arlington	Gilliam	2,602.37	1,221.42	2,604.14	6,427.93
Ashland	Jackson	20,272.03	9,514.64	20,285.75	50,072.42
Astoria	Clatsop	44,394.21	20,836.34	44,424.26	109,654.81
Athena	Umatilla	2,192.14	1,028.88	3,224.17	6,445.19
Aumsville	Marion	743.54	348.98	1,043.37	2,135.89
Aurora	Marion	974.29	487.36	1,039.09	2,500.74
Baker	Baker	39,920.18	18,736.46	39,947.19	98,603.83
Bandon	Coos	4,290.29	2,013.64	4,293.19	10,597.12
Banks	Washington	1,055.48	495.39	1,056.19	2,607.06
Barlow	Clackamas	222.20	104.29	222.36	548.85
Bay City	Tillamook	1,619.54	1,079.02	2,300.53	4,999.09
Beaverton	Washington	5,156.29	2,992.38	6,379.92	14,528.59
Bend	Deschutes	42,821.68	20,098.27	42,850.66	105,770.61
Boardman	Morrow	470.05	220.62	470.37	1,161.04
Bonanza	Klamath	995.66	467.31	996.33	2,459.30
Brownsville	Linn	3,614.53	1,925.39	4,105.04	9,644.96
Burns	Harney	10,965.02	5,146.41	10,972.44	27,083.87
Butte Falls	Jackson	1,448.61	679.90	1,449.59	3,578.10
Canby	Clackamas	4,594.40	2,478.94	5,285.24	12,358.58
Canyon City	Grant	1,333.24	625.75	1,334.14	3,293.13
Canyonville	Douglas	1,089.67	511.43	3,365.28	4,966.38
Carlton	Yamhill	3,842.24	1,933.41	4,122.15	9,897.80
Cascade Locks	Hood River	3,004.05	1,409.95	3,006.09	7,420.09
Cave Junction	Josephine	.....	487.36	1,039.09	1,526.45
Central Point	Jackson	4,247.01	2,318.49	4,943.16	11,508.66
Chiloquin	Klamath	3,166.43	1,486.16	3,168.58	7,821.17
Clatskanie	Columbia	3,025.42	1,419.98	3,027.47	7,472.87
Coburg	Lane	1,948.58	914.56	1,949.90	4,813.04
Columbia City	Columbia	1,397.33	655.84	1,398.28	3,451.45
Condon	Gilliam	3,657.85	1,716.81	3,925.45	9,300.11
Coos Bay	Coos	22,472.72	10,547.53	22,487.94	55,508.19
Coquille	Coos	14,216.92	6,672.68	14,226.54	35,116.14
Cornelius	Washington	2,938.32	1,566.39	3,339.62	7,844.33
Corvallis	Benton	35,860.64	16,831.12	35,884.91	88,576.67
Cottage Grove	Lane	11,221.40	5,266.75	11,229.00	27,717.15
Cove	Union	1,371.69	643.80	1,372.62	3,388.11
Creswell	Lane	2,123.78	996.79	2,659.73	5,780.30
Culver	Jefferson	.....	363.02	773.97	1,136.99
Dallas	Polk	15,293.77	7,178.10	15,304.11	37,775.98
Dayton	Yamhill	2,356.00	1,273.57	2,715.31	6,344.88
Dayville	Grant	581.15	272.76	581.55	1,435.46

Table No. 27—Continued

City	County	Total 1944 to 1946	1947	1948	Total 1944 to 1948
Donald	Marion	700.80	373.04	795.35	1,869.19
Drain	Douglas	2,551.10	1,197.35	4,216.22	7,964.67
Dufur	Wasco	1,675.10	786.20	1,676.23	4,137.53
Dundee	Yamhill	893.10	419.17	893.70	2,205.97
Eagle Point	Jackson	1,038.38	904.53	1,928.51	3,871.42
Eastside	Coos	2,726.29	1,279.58	3,792.89	7,798.76
Echo	Umatilla	1,457.84	910.55	1,941.34	4,309.73
Elgin	Union	4,260.36	1,999.60	5,024.40	11,284.36
Empire	Coos	2,904.75	1,417.97	3,023.19	7,345.91
Enterprise	Wallowa	7,302.89	3,427.60	7,307.83	18,038.32
Estacada	Clackamas	2,468.50	1,349.78	2,877.81	6,696.09
Eugene	Lane	89,044.80	41,793.01	89,105.08	219,942.89
Fairview	Multnomah	1,303.32	611.71	1,304.21	3,219.24
Falls City	Polk	3,055.34	1,434.01	3,057.40	7,546.75
Florence	Lane	2,177.91	1,213.40	2,587.03	5,978.34
Forest Grove	Washington	10,465.04	4,911.75	10,472.13	25,848.92
Fossil	Wheeler	2,273.34	1,066.99	2,274.88	5,615.21
Freewater	Umatilla	3,849.81	2,087.85	4,451.41	10,389.07
Garibaldi	Tillamook	.....	1,803.05	3,844.20	5,647.25
Gaston	Washington	1,422.97	667.87	1,423.94	3,514.78
Gearhart	Clatsop	1,363.15	639.79	2,625.52	4,628.46
Gervais	Marion	1,418.70	665.86	1,419.66	3,504.22
Gladstone	Clackamas	7,383.10	3,830.72	8,167.32	19,381.14
Glendale	Douglas	2,380.17	1,117.13	2,381.78	5,879.08
Gold Beach	Curry	854.64	1,141.19	2,433.09	4,428.92
Gold Hill	Jackson	2,290.43	1,075.01	2,728.14	6,093.58
Granite	Grant	367.49	172.48	367.74	907.71
Grants Pass	Josephine	25,758.81	12,089.85	25,776.25	63,624.91
Grass Valley	Sherman	871.73	409.15	872.32	2,153.20
Gresham	Multnomah	9,498.06	5,463.30	11,648.06	26,609.42
Haines	Baker	1,611.00	756.12	1,612.08	3,979.20
Halfway	Baker	1,777.65	834.34	1,778.85	4,390.84
Halsey	Linn	1,303.32	611.71	1,304.21	3,219.24
Hammond	Clatsop	1,803.29	846.37	1,804.51	4,454.17
Harrisburg	Linn	2,657.93	1,247.49	3,677.43	7,582.85
Helix	Umatilla	517.06	242.68	782.52	1,542.26
Heppner	Morrow	5,290.50	2,845.97	6,067.77	14,204.24
Hermiston	Umatilla	5,390.00	4,225.83	9,009.71	18,625.54
Hillsboro	Washington	16,011.65	7,515.04	16,022.49	39,549.18
Hines	Harney	2,892.96	1,357.80	2,894.91	7,145.67
Hood River	Hood River	14,016.07	6,578.42	14,025.56	34,620.05
Hubbard	Marion	1,653.73	776.17	2,142.32	4,572.22
Huntington	Baker	3,166.44	1,486.16	4,058.01	8,710.61
Imbler	Union	777.73	365.02	778.25	1,921.00
Independence	Polk	6,217.29	3,225.03	6,875.95	16,318.27
Ione	Morrow	1,119.58	525.47	1,120.33	2,765.38
Island City	Union	756.36	354.99	756.87	1,868.22
Jacksonville	Jackson	3,251.89	2,027.68	4,323.12	9,602.69
Jefferson	Marion	2,046.86	960.69	2,048.25	5,055.80
John Day	Grant	3,025.42	1,929.40	4,113.59	9,068.41
Jordan Valley	Malheur	1,170.85	549.54	1,171.65	2,892.04
Joseph	Wallowa	2,534.00	1,189.33	2,535.72	6,259.05
Junction City	Lane	5,072.29	2,837.95	6,050.66	13,960.90
Juntura	Malheur	250.84	334.94	714.11	1,299.89
Klamath Falls	Klamath	70,494.87	33,086.63	70,542.59	174,124.09
Lafayette	Yamhill	1,974.55	1,123.14	2,394.61	5,492.30
La Grande	Union	33,104.42	15,537.50	33,126.84	81,768.76
Lakeview	Lake	10,537.70	4,945.85	10,544.83	26,028.38
Lebanon	Linn	11,661.55	5,473.32	11,669.44	28,804.31
Lexington	Morrow	952.93	447.25	953.57	2,353.75
Lonerock	Gilliam	196.57	92.26	196.70	485.53
Long Creek	Grant	1,017.02	477.34	1,017.71	2,512.07
Lostine	Wallowa	871.73	409.15	872.32	2,153.20
Madras	Jefferson	1,760.56	1,594.46	3,399.49	6,754.51

Table No. 27—Continued

City	County	Total 1944 to 1946	1947	1948	Total 1944 to 1948
Malin	Klamath	2,286.16	1,073.00	2,287.71	5,646.87
Manzanita	Tillamook	.....	439.23	936.46	1,375.69
Maupin	Wasco	1,140.95	535.50	1,141.71	2,818.16
McMinnville	Yamhill	15,836.45	7,432.81	15,847.17	39,116.43
Medford	Jackson	48,205.90	22,625.34	48,238.52	119,069.76
Merrill	Klamath	2,769.03	1,299.64	2,770.90	6,839.57
Mill City	Linn	.....	.....	5,229.65	5,229.65
Milton	Umatilla	7,610.16	3,708.38	7,906.48	19,225.02
Milwaukie	Clackamas	12,914.24	10,320.90	22,004.74	45,239.88
Mitchell	Wheeler	935.84	439.23	936.46	2,311.53
Molalla	Clackamas	4,369.95	2,478.94	5,285.24	12,134.13
Monmouth	Polk	4,284.35	2,150.02	4,583.96	11,018.33
Monroe	Benton	1,328.96	623.75	1,329.86	3,282.57
Monument	Grant	.....	236.66	504.58	741.24
Moro	Sherman	1,320.41	619.74	1,321.31	3,261.46
Mosier	Wasco	923.00	433.21	923.63	2,279.84
Mt. Angel	Marion	4,780.94	2,565.18	5,469.11	12,815.23
Myrtle Creek	Douglas	1,884.49	1,432.01	3,053.13	6,369.63
Myrtle Point	Coos	5,538.06	2,599.28	6,897.33	15,034.67
Nehalem	Tillamook	1,055.48	495.39	1,056.19	2,607.06
Newberg	Yamhill	12,648.65	5,936.62	12,657.21	31,242.48
Newport	Lincoln	8,627.58	4,049.34	8,633.42	21,310.34
North Bend	Coos	18,212.35	8,547.93	18,224.68	44,984.96
North Powder	Union	1,606.72	754.11	1,607.81	3,968.64
Nyssa	Malheur	7,926.77	3,720.42	10,467.86	22,115.05
Oakland	Douglas	1,568.26	1,189.33	2,535.72	5,293.31
Oakridge	Lane	2,222.06	1,042.92	4,237.60	7,502.58
Oceanlake	Lincoln	836.62	1,117.13	2,381.78	4,335.53
Ontario	Malheur	15,174.11	7,121.94	15,184.38	37,480.43
Oregon City	Clackamas	26,169.04	12,282.39	26,186.75	64,638.18
Oswego	Clackamas	8,455.48	4,903.73	10,455.03	23,814.24
Paisley	Lake	1,012.75	475.33	1,013.43	2,501.51
Pendleton	Umatilla	37,804.94	17,743.68	37,830.53	93,379.15
Philomath	Benton	3,687.89	1,756.92	3,745.85	9,190.66
Phoenix	Jackson	1,846.02	1,285.60	2,740.97	5,872.59
Pilot Rock	Umatilla	1,710.04	958.68	2,043.97	4,712.69
Portland	Multnomah	870,005.10	408,335.21	870,593.99	2,148,934.30
Port Orford	Curry	3,226.26	1,514.24	3,228.44	7,968.94
Powers	Coos	1,144.53	1,528.28	3,258.38	5,931.19
Prairie City	Grant	2,764.75	1,405.94	2,997.54	7,168.23
Prineville	Crook	10,076.19	4,729.24	10,083.01	24,888.44
Rainier	Columbia	5,055.19	2,372.64	5,058.61	12,486.44
Redmond	Deschutes	8,449.09	4,340.15	9,253.45	22,042.69
Reedsport	Douglas	6,910.33	3,969.11	8,462.37	19,341.81
Richland	Baker	1,085.39	509.43	1,086.13	2,680.95
Riddle	Douglas	914.47	429.20	2,659.73	4,003.40
Rockaway	Tillamook	2,632.29	1,235.46	4,070.83	7,938.58
Rogue River	Jackson	1,636.64	950.66	2,026.86	4,614.16
Roseburg	Douglas	21,041.21	9,875.65	21,055.45	51,972.31
St. Helens	Columbia	18,391.82	8,632.17	18,404.27	45,428.26
St. Paul	Marion	782.00	367.03	782.52	1,931.55
Salem	Marion	132,075.87	61,989.55	132,165.26	326,230.68
Sandy	Clackamas	2,302.10	1,323.71	2,822.22	6,448.03
Scappoose	Columbia	1,685.12	1,006.82	2,146.60	4,838.54
Scio	Linn	1,499.90	703.97	1,872.93	4,076.80
Scotts Mills	Marion	970.02	455.27	970.67	2,395,96
Seaside	Clatsop	12,400.80	5,820.29	12,409.20	30,630.29
Shaniko	Wasco	235.03	110.31	235.18	580.52
Sheridan	Yamhill	5,844.94	3,016.45	6,431.23	15,292.62
Sherwood	Washington	2,084.35	1,129.16	2,407.44	5,620.95
Siletz	Lincoln	.....	.....	2,488.68	2,488.68
Silver Lake	Lake	133.22*	.....	.....	133.22
Silverton	Marion	12,499.09	5,866.42	12,507.55	30,873.06
Sisters	Deschutes	.....	1,315.68	2,805.11	4,120.79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† The 1947 law provided for the withholding of $250,000 annually from the cities' share of highway income to be expended by the State Highway Commission upon streets not a part of the state highway system which are receiving excessive wear through increased or unusual use.

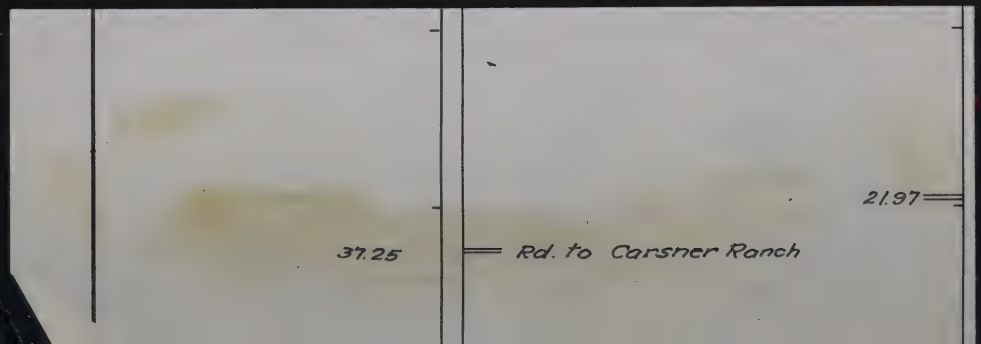
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Table No. 27—Continued

City	County	Total 1944 to 1946	1947	1948	Total 1944 to 1948
Sodaville	Linn	423.05	198.56	423.33	1,044.94
Springfield	Lane	16,259.50	7,631.37	16,270.51	40,161.38
Stanfield	Umatilla	1,518.00	1,135.18	2,420.26	5,073.44
Stayton	Marion	4,636.42	2,176.09	5,785.54	12,598.05
Sublimity	Marion	1,196.49	561.57	1,197.30	2,955.36
Summerville	Union	341.85	160.45	342.09	844.39
Sumpter	Baker	1,794.73	842.36	1,795.96	4,433.05
Sutherlin	Douglas	3,407.48	2,607.30	5,558.91	11,573.69
Sweet Home	Linn	6,236.38	4,294.02	9,155.10	19,685.50
Talent	Jackson	1,628.09	764.14	1,629.19	4,021.42
The Dalles	Wasco	26,775.84	12,567.18	26,793.96	66,136.98
Tillamook	Tillamook	11,755.55	5,517.45	11,763.51	29,036.51
Toledo	Lincoln	9,777.07	4,588.85	9,783.69	24,149.61
Troutdale	Multnomah	901.63	423.18	902.25	2,227.06
Tualatin	Washington	856.29	477.34	1,017.71	2,351.34
Turner	Marion	1,769.10	830.32	2,368,95	4,968.37
Umatilla	Umatilla	1,581.08	742.08	1,582.15	3,905.31
Union	Union	5,973.92	2,803.85	5,977.97	14,755.74
Vale	Malheur	4,627.87	2,172.08	5,875.34	12,675.29
Vernonia	Columbia	6,033.75	2,847.97	6,072.04	14,953.76
Waldport	Lincoln	2,692.11	1,263.54	2,693.93	6,649.58
Wallowa	Wallowa	3,580.93	1,680.71	3,583.36	8,845.00
Warrenton	Clatsop	5,832.91	3,842.76	8,192.98	17,868.65
Wasco	Sherman	1,294.78	607.70	1,295.65	3,198.13
West Linn	Clackamas	9,251.46	4,342.16	9,257.73	22,851.35
Weston	Umatilla	2,128.05	998.80	2,129.49	5,256.34
West Salem	Polk	6,367.06	4,021.26	8,573.55	18,961.87
Wheeler	Tillamook	1,106.75	519.45	1,107.51	2,733.71
Willamina	Yamhill	3,206.88	1,776.97	3,788.61	8,772.46
Woodburn	Marion	8,796.91	4,412.35	9,407.39	22,616.65
Yamhill	Yamhill	1,786.20	838.35	1,787.40	4,411.95
Yoncalla	Douglas	1,335.37	758.12	1,616.36	3,709.85
Total amounts disbursed		$2,309,154.38	$1,116,720.52	$2,413,328.79†	$5,839,203.69

2,528,090.12
8,367,293.81

* The City of Silver Lake was disincorporated in 1945.

† The $2,413,328.79 distributed to cities in 1948 represents the balance of the 1948 apportionment after withholding $250,000 to be expended by the State Highway Commission upon streets not a part of the state highway system which are receiving excessive wear through increased or unusual use.

See below

Amounts withheld + -- -- 250,000

Total

Table No. 28

MILEAGES OF PRIMARY STATE HIGHWAYS

The mileages given in this table are inclusive of mileages within cities and towns.

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement: Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
1	Pacific	225.06	74.04	111.50	39.25	0.27			
1E	Pacific, East	110.91	45.72	56.28	8.91				
1W	Pacific, West	116.07	54.92	31.78	29.37				
2	Columbia River	315.62	24.53	165.72	74.42	50.95			
3	Oswego	11.55	7.53	4.02					
4	The Dalles-California	295.32	2.45	5.74	60.84	226.29			
5	John Day	278.50			59.03	214.66	4.81		
6	Old Oregon Trail	238.09	2.74	7.35	169.96	58.04			
7	Central Oregon	258.59	0.04	0.27	58.94	199.34			
8	Oregon-Washington	35.30		7.74	27.56				
9	Oregon Coast	384.33	32.90	27.43	131.30	190.52			2.18
10	Wallowa Lake	71.95	0.24	2.94	12.50	56.27			
11	Enterprise-Lewiston	45.28		0.04		7.75	28.05	9.44	
12	Baker-Homestead	81.06		0.33		48.99	3.90		27.84
13	Baker-Unity	46.41		0.42		30.08	1.74	14.17	
14	Crooked River	42.48				0.13		42.35	
15	McKenzie	111.55	0.25	0.46	33.25	77.59			
16	Santiam	100.82		22.06	26.30	52.46			
17	McKenzie-Bend	20.07				20.07			
18	Willamette	86.66			4.11	82.55			
19	Fremont	158.17			51.23	106.94			
20	Klamath Falls-Lakeview	95.81	3.79	1.29	42.37	48.36			
21	Green Springs	59.08		5.69	33.86	19.53			
22	Crater Lake	86.80	22.58	0.14	36.77	27.31			
23	Dairy-Bonanza	6.97				6.97			
24	Burns-Crane	28.91				18.01	10.90		
25	Redwood	42.51	0.11		10.83	31.57			
26	Mt. Hood	102.27	11.53	13.71	34.00	43.03			
27	Alsea	59.11			3.19	35.32	20.60		
28	Pendleton-John Day	122.29		1.62	30.22	80.18	3.50		6.77
29	Tualatin Valley	42.28	20.18	22.10					
30	Salem-Dallas	15.53	0.16	9.52	5.85				
31	Albany-Corvallis	11.12	10.26	0.86					
32	Three Rivers	24.74			4.41	20.33			
33	Corvallis-Newport	56.90	0.45	0.17	27.62	28.66			
34	Siuslaw	67.45			15.98	51.47			
35	Coos Bay-Roseburg	61.81	0.11	0.31	9.01	52.38			
36	Pendleton-Cold Springs	30.88			5.22	25.15	0.51		
37	Wilson River	54.32	1.70	11.83	3.86	24.11			12.82
38	Oregon Caves	19.70				19.70			
39	Salmon River	44.82	7.21	5.34	32.27				
40	Beaverton Hillsdale	6.72	4.10	2.62					
41	Ochoco	104.01			1.63	65.27	37.11		
42	Sherman	68.85			15.86	52.99			
43	Monmouth-Independence	2.35		2.35					
44	Wapinitia	40.00		1.00	23.03	15.97			
45	Umpqua	50.13	0.59		33.52	16.02			
46	Necanicum	22.09			9.22	12.87			
47	Sunset	74.83	3.56	11.69	39.51	20.07			
48	John Day-Burns	68.03			18.63	24.35	25.05		
49	Lakeview-Burns	90.10				90.10			
50	Klamath Falls-Malin	27.09	0.10		18.14	8.85			
51	West Portland-Hubbard	17.16	4.48	3.43		0.04			9.21
52	Heppner	84.37				63.13	21.24		
53	Warm Springs	46.43				14.52		31.91	
54	Boardman-Stanfield	25.55			25.55				
55	Halfway	11.15				11.15			
56	Sullivan Gulch	14.03							14.03
	Totals	4,819.98	336.27	537.75	1,267.52	2,350.31	157.41	97.87	72.85

Table No. 29

MILEAGES OF PRIMARY STATE HIGHWAYS BY COUNTIES

The mileages given in this table are inclusive of mileages within cities and towns.

County	Total Mileage in County	Miles of Different Types of Improvement						
		Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	230.84	0.98	1.66	70.33	110.22	5.64	14.17	27.84
Benton	93.41	17.73	11.38	23.32	40.98	.....	.....	.....
Clackamas	78.62	27.10	6.68	36.94	2.90	.....	.....	5.00
Clatsop	110.36	16.91	31.67	43.79	17.99	.....	.....	.....
Columbia	56.21	3.82	51.58	.....	0.81	.....	.....	.....
Coos	102.46	21.49	2.33	24.96	53.68	.....	.....	.....
Crook	82.88	.....	.....	1.63	29.78	13.19	38.28	.....
Curry	90.12	0.37	.....	12.15	77.60	.....	.....	.....
Deschutes	204.32	0.52	3.45	47.33	148.95	.....	4.07	.....
Douglas	198.41	30.40	59.90	43.09	65.02	.....	.....	.....
Gilliam	97.21	0.05	.....	14.91	82.25	.....	.....	.....
Grant	195.97	.....	.....	22.08	146.58	20.54	.....	6.77
Harney	185.77	.....	.....	49.49	112.56	23.72	.....	.....
Hood River	69.22	0.53	23.36	5.20	40.13	.....	.....	.....
Jackson	148.03	32.63	36.27	60.98	18.15	.....	.....	.....
Jefferson	71.04	.....	.....	21.99	42.41	.....	6.64	.....
Josephine	93.57	6.34	7.89	27.80	51.54	.....	.....	.....
Klamath	311.13	5.86	3.85	104.14	197.28	.....	.....	.....
Lake	244.71	.....	.....	51.23	193.48	.....	.....	.....
Lane	286.28	33.91	16.86	55.67	179.84	.....	.....	.....
Lincoln	137.45	1.23	.....	74.45	41.17	20.60	.....	.....
Linn	117.24	11.47	37.67	21.32	46.78	.....	.....	.....
Malheur	182.42	1.60	1.79	66.69	112.34	.....	.....	.....
Marion	45.54	18.63	26.87	.....	0.04	.....	.....	.....
Morrow	107.44	.....	.....	15.52	81.13	10.79	.....	.....
Multnomah	133.13	31.55	83.99	3.56	.....	.....	.....	14.03
Polk	57.84	5.68	18.32	32.73	1.11	.....	.....	.....
Sherman	63.92	0.04	.....	30.69	33.19	.....	.....	.....
Tillamook	132.42	7.08	16.46	51.69	55.01	.....	.....	2.18
Umatilla	245.98	0.16	11.30	144.26	79.30	10.96	.....	.....
Union	84.49	0.24	4.70	37.93	41.62	.....	.....	.....
Wallowa	83.71	.....	0.99	7.72	37.51	28.05	9.44	.....
Wasco	190.17	.....	20.00	37.82	107.08	.....	25.27	.....
Washington	107.23	16.06	46.49	21.78	5.87	.....	.....	17.03
Wheeler	107.20	.....	.....	.....	83.28	23.92	.....	.....
Yamhill	73.24	43.89	12.29	4.33	12.73	.....	.....	.....
Totals	4,819.98	336.27	537.75	1,267.52	2,350.31	157.41	97.87	72.85

Table No. 30

MILEAGES OF SECONDARY STATE HIGHWAYS

The mileages given in this table are inclusive of mileages within cities and towns.

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement						
			Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
102	Nehalem	85.66	10.97	5.81	15.85	53.03	—	—	—
103	Fishhawk Falls	5.86	—	—	—	—	—	—	5.86
104	Fort Stevens	4.53	2.47	1.20	0.86	—	—	—	—
105	Warrenton	1.62	—	1.62	—	—	—	—	—
110	Mist-Clatskanie	11.90	—	—	—	11.90	—	—	—
120	Swift	2.94	2.09	0.85	—	—	—	—	—
122	Vancouver Avenue	0.50	0.50	—	—	—	—	—	—
123	Northeast Portland	5.10	4.17	0.93	—	—	—	—	—
124	Sun Dial	1.25	2.36	0.36 ~~1.25~~	—	—	—	—	—
130	Little Nestucca	9.40	—	—	—	—	3.94	3.02	2.44
131	Netarts	9.15	1.56	0.10	—	7.49	—	—	—
140	Hillsboro-Silverton	52.19	0.35	32.22	—	19.62	—	—	—
141	Beaverton-Aurora	20.81	0.39	2.94	—	17.33	—	—	0.15
142	Farmington	9.89	—	—	—	9.89	—	—	—
143	Scholls	12.40	—	—	—	12.40	—	—	—
150	Salem-Dayton	20.10	0.03	—	—	20.07	—	—	—
151	Yamhill-Newberg	11.65	0.80	0.58	—	10.27	—	—	—
152	Three Mile Lane	8.46	7.83	0.63	—	—	—	—	—
153	Bellevue-Hopewell	14.89	—	—	—	14.89	—	—	—
154	Lafayette	5.75	—	—	—	5.75	—	—	—
155	Amity-Dayton	7.03	—	—	—	7.03	—	—	—
156	McMinnville	1.80	1.05	0.75	—	—	—	—	—
160	Cascade	44.61	6.40	16.72	—	21.49	—	—	—
161	Woodburn-Estacada	34.19	0.62	1.52	4.85	27.20	—	—	—
162	North Santiam	77.70	—	15.46	3.53	35.87	—	—	22.84
163	Silver Creek Falls	40.82	—	12.49	—	28.33	—	—	—
164	Jefferson	8.45	1.19	6.85	0.41	—	—	—	—
170	Canby-Marquam	8.02	0.22	—	—	7.80	—	—	—
171	Clackamas	24.68	—	23.08	—	—	1.60	—	—
172	Eagle Creek-Sandy	5.96	—	—	—	5.96	—	—	—
180	Eddyville-Blodgett	19.29	—	—	—	7.64	11.65	—	—
181	Siletz	31.73	—	—	5.55	7.78	18.40	—	—
182	Otter Rock	0.45	—	—	—	0.45	—	—	—
191	Kings Valley	28.05	—	0.43	—	25.76	1.86	—	—
192	Dallas-Coast	14.83	—	—	4.13	10.70	—	—	—
193	Independence	6.38	0.06	3.32	—	3.00	—	—	—
194	Monmouth	7.20	—	—	—	6.75	0.45	—	—
200	Territorial	45.99	—	—	3.33	16.97	25.69	—	—
201	Alsea-Deadwood	27.26	—	—	—	—	27.26	—	—
202	Tampico-Lewisville	5.46	—	—	—	—	5.46	—	—
210	Corvallis-Eastside	10.19	—	0.28	—	9.91	—	—	—
211	Albany-Lyons	24.66	0.04	6.16	2.89	4.82	10.75	—	—
212	Halsey-Sweet Home	21.51	—	4.00	—	17.51	—	—	—
213	Mehama-Mill City	8.70	—	—	—	8.70	—	—	—
214	Albany Airport	1.07	—	—	—	1.07	—	—	—
220	Richardson-Eugene	37.03	—	0.66	5.09	6.09	23.86	—	1.33
221	Fox Hollow	15.50	1.13	—	—	—	5.87	—	8.50
222	Springfield-Creswell	15.81	—	—	—	6.42	9.39	—	—
223	Junction City-Eugene	13.52	0.70	12.82	—	—	—	—	—
224	W. 7th-W. 11th St.	0.38	—	—	—	—	—	—	0.38
230	Tiller-Trail	49.59	—	—	—	33.86	15.73	—	—
231	Elkton-Sutherlin	29.26	—	0.10	—	—	29.16	—	—
232	Crater Lake North	5.29	—	—	—	5.29	—	—	—
233	West Diamond Lake	23.89	—	—	—	23.89	—	—	—
240	Cape Arago	14.25	0.34	0.22	—	10.57	3.12	—	—
241	Coos River	18.86	0.59	—	—	5.33	7.74	—	5.20
242	Powers	18.62	0.15	—	—	18.42	0.05	—	—
243	Empire-Coos Bay	3.55	—	0.72	—	2.83	—	—	—
250	Cape Blanco	5.54	—	—	—	—	4.50	—	1.04
251	Port Orford	0.79	—	—	—	—	0.79	—	—

Table No. 30—Continued

Hwy. No.	Highway	Total Mileage of Highway	Miles of Different Types of Improvement: Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
260	Rogue River Loop	22.93	—	0.12	—	17.80	5.01	—	—
261	Williams	23.13	—	—	—	23.13	—	—	—
270	Little Butte	30.33	—	—	—	14.13	—	0.35	15.85
271	Sams Valley	17.25	—	—	—	17.25	—	—	—
272	Medford-Provolt	25.42	—	9.54	—	15.88	—	—	—
273	Siskiyou	7.61	—	7.61	—	—	—	—	—
281	Hood River	17.28	2.43	—	1.45	13.40	—	—	—
282	Odell	3.51	0.82	—	—	0.76	1.93	—	—
290	Sherars Bridge	28.63	—	—	—	12.16	14.13	2.34	—
291	Shaniko-Fossil	43.65	—	—	—	0.60	22.99	11.15	8.91
300	Wasco-Heppner	89.41	—	—	—	48.97	13.69	5.78	20.97
301	Fulton Canyon	1.28	—	—	—	1.28	—	—	—
320	Lexington-Echo	39.36	—	—	—	39.36	—	—	—
321	Heppner-Spray	40.96	—	—	—	8.66	32.30	—	—
330	Weston-Elgin	41.39	—	0.10	—	41.29	—	—	—
332	Sunnyside Umapine	7.25	—	—	—	7.25	—	—	—
333	Hermiston	17.78	—	—	0.87	16.91	—	—	—
334	Athena-Holdman	16.44	—	0.19	—	2.97	13.28	—	—
335	Havana-Helix	8.96	0.05	—	—	8.91	—	—	—
336	Pendleton Airport	1.36	—	—	1.36	—	—	—	—
337	Stanfield-Pendleton	24.65	—	—	—	24.65	—	—	—
338	Ordnance Depot	0.41	—	—	0.41	—	—	—	—
340	Medical Springs	42.67	—	—	—	42.34	0.33	—	—
341	Starkey	16.61	—	—	—	12.46	2.60	1.55	—
342	Cove	22.16	—	—	—	22.16	—	—	—
350	Little Sheep Creek	30.42	—	—	—	3.17	5.05	22.20	—
351	Joseph-Wallowa Lake	6.32	—	—	—	6.16	0.16	—	—
360	Madras-Prineville	26.81	—	—	—	26.81	—	—	—
361	Culver	11.64	—	—	—	11.64	—	—	—
370	O'Neil	17.81	—	—	—	3.90	13.91	—	—
371	Powell Butte	17.92	—	—	—	0.92	7.70	9.30	—
372	Century Drive	11.65	—	0.58	—	11.07	—	—	—
373	Cline Falls	10.06	—	—	—	10.06	—	—	—
374	Tumalo-Deschutes	3.85	—	—	—	3.85	—	—	—
375	Redmond-Bend	13.53	—	—	—	13.53	—	—	—
380	Paulina	56.13	—	—	—	—	38.03	18.10	—
390	Service Creek-Mitchell	24.85	—	—	—	—	13.87	0.76	10.22
401	Beach Creek	5.35	—	—	—	5.35	—	—	—
402	Kimberly-Long Creek	35.31	—	—	—	21.54	13.77	—	—
410	Sumpter Valley	22.81	—	—	—	—	19.67	—	3.14
411	Haines-Anthony	12.60	—	—	—	—	11.70	—	0.90
413	Halfway-Cornucopia	11.45	—	—	—	5.75	5.70	—	—
414	Pine Creek	3.72	—	—	—	—	3.72	—	—
420	Midland	5.79	—	—	2.14	3.65	—	—	—
421	Klamath Lake	50.21	—	0.61	0.07	5.55	9.63	6.94	27.41
422	Chiloquin	9.95	—	—	9.95	—	—	—	—
423	Lower Klamath	7.01	—	—	—	7.01	—	—	—
424	Sand Creek	4.23	—	—	4.23	—	—	—	—
425	East Diamond Lake	14.72	—	—	—	14.72	—	—	—
426	Hatfield	2.51	—	—	—	2.51	—	—	—
427	Modoc Point	12.90	—	—	—	12.90	—	—	—
428	Sun Mountain	26.98	—	—	—	26.98	—	—	—
431	Werner	46.21	—	—	—	—	21.42	13.72	11.07
440	Frenchglen	62.00	—	—	—	—	12.10	—	49.90
441	Diamond Valley	36.18	—	—	—	7.97	5.17	23.04	—
442	Rome-Princeton	61.71	—	—	—	18.13	5.22	15.91	22.45
450	Nyssa-Adrian	22.47	—	—	—	22.47	—	—	—
451	Vale-West	10.72	—	—	—	10.72	—	—	—
452	Adrian-Parma	2.77	—	—	—	2.77	—	—	—
453	Adrian-Arena Valley	3.19	—	—	—	2.26	0.93	—	—
454	Adrian-Caldwell	5.10	—	—	—	2.86	2.24	—	—
456	I. O. N.	117.87	—	—	—	111.01	—	—	6.86
458	Jordan Valley	10.43	—	—	—	10.43	—	—	—
	Totals	2,477.57	46.95	172.46	66.97	1,315.63	513.38	135.21	226.97

Table No. 31

MILEAGES OF SECONDARY STATE HIGHWAYS BY COUNTIES

The mileages given in this table are inclusive of mileages within cities and towns.

County	Total Mileage in County	Miles of Different Types of Improvement						
		Concrete Pavement	Bituminous Pavement	Bituminous Macadam	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	70.35	.....	.....	.....	25.52	40.79	.....	4.04
Benton	31.49	.....	0.13	.....	12.64	18.72	.....	.....
Clackamas	107.87	4.17	32.24	4.85	64.86	1.60	.....	0.15
Clatsop	49.84	13.44	7.09	0.86	22.59	.....	.....	5.86
Columbia	42.05	.....	0.78	8.35	32.92	.....	.....	.....
Coos	55.28	1.08	0.94	.....	37.15	10.91	.....	5.20
Crook	88.31	.....	.....	.....	10.57	59.64	18.10	.....
Curry	6.33	.....	.....	.....	.....	5.29	.....	1.04
Deschutes	53.15	.....	0.58	.....	43.27	.....	9.30	.....
Douglas	97.72	.....	0.10	.....	47.78	49.84	.....	.....
Gilliam	41.38	.....	.....	.....	19.70	4.79	5.78	11.11
Grant	40.66	.....	.....	.....	26.89	13.77	.....	.....
Harney	122.48	.....	.....	.....	11.14	22.49	38.95	49.90
Hood River	20.79	3.25	.....	1.45	14.16	1.93	.....	.....
Jackson	97.19	.....	17.15	.....	63.84	.....	0.35	15.85
Jefferson	27.94	.....	.....	.....	27.94	.....	.....	.....
Josephine	46.06	.....	0.12	.....	40.93	5.01	.....	.....
Klamath	132.98	.....	0.61	16.39	72.00	9.63	6.94	27.41
Lake	46.21	.....	.....	.....	.....	21.42	13.72	11.07
Lane	141.22	1.83	13.48	8.42	27.46	79.82	.....	10.21
Lincoln	44.71	.....	.....	5.55	15.07	24.09	.....	.....
Linn	88.62	0.24	11.98	3.30	62.35	10.75	.....	.....
Malheur	209.96	.....	.....	.....	177.48	3.17	.....	29.31
Marion	145.18	1.24	71.07	3.53	46.50	.....	.....	22.84
Morrow	73.90	.....	.....	.....	57.81	16.09	.....	.....
Multnomah	16.78	9.97	6.81	.....	.....	.....	.....	.....
Polk	56.24	0.06	3.75	4.13	45.99	2.31	.....	.....
Sherman	40.35	.....	.....	.....	5.12	23.03	2.34	9.86
Tillamook	18.55	1.56	0.10	.....	7.49	3.94	3.02	2.44
Umatilla	117.93	0.05	0.29	2.64	101.67	13.28	.....	.....
Union	81.46	.....	.....	.....	64.52	12.79	2.60	1.55
Wallowa	36.74	.....	.....	.....	9.33	5.21	22.20	.....
Wasco	31.64	.....	.....	.....	8.32	17.84	5.48	.....
Washington	68.09	0.35	1.54	7.50	58.70	.....	.....	.....
Wheeler	61.39	.....	.....	.....	0.60	35.23	6.43	19.13
Yamhill	66.73	9.71	3.70	.....	53.32	.....	.....	.....
Totals	2,477.57	46.95	172.46	66.97	1,315.63	513.38	135.21	226.97

Table No. 32

MILEAGES OF COUNTY ROADS

County road mileages are segregated in this table by counties and by types of improvement. Mileages of roads within National Forests, National Parks, Indian Reservations, State Forests, State Parks and Military Reservations, and Mileages of City Streets not on the state highway system are segregated by types of improvement only. The data have been compiled from mileages reported by the Statewide Highway Planning Survey.

County	Total Mileage in County	Miles of Different Types of Improvement					
		Concrete Pavement	Bituminous Pavement	Oiled Surfacing	Unoiled Surfacing	Graded Only	Unimproved
Baker	1,479	.....	.....	.....	373	652	454
Benton	452	.....	.....	36	322	18	76
Clackamas	1,785	61	59	212	918	50	485
Clatsop	198	11	.....	15	162	5	5
Columbia	598	1	.....	67	458	7	65
Coos	790	.....	2	20	466	86	216
Crook	657	.....	.....	.....	146	144	367
Curry	132	.....	.....	.....	29	50	53
Deschutes	1,320	.....	.....	43	86	459	732
Douglas	1,782	6	4	40	822	10	900
Gilliam	510	.....	.....	.....	115	288	107
Grant	468	.....	.....	.....	67	62	339
Harney	1,897	.....	.....	.....	80	476	1,341
Hood River	211	.....	.....	20	126	9	56
Jackson	1,038	7	3	139	556	122	211
Jefferson	660	.....	.....	3	343	160	154
Josephine	537	.....	6	14	433	60	24
Klamath	1,213	.....	.....	62	411	63	677
Lake	1,540	.....	.....	.....	180	.....	1,360
Lane	3,025	.....	7	206	1,026	27	1,759
Lincoln	667	.....	.....	5	134	.....	528
Linn	1,305	.....	.....	132	961	57	155
Malheur	1,946	.....	.....	.....	149	42	1,755
Marion	1,234	.....	123	259	752	.....	100
Morrow	1,207	.....	.....	8	290	521	388
Multnomah	1,060	15	105	262	213	24	441
Polk	668	.....	8	57	415	100	108
Sherman	476	.....	.....	6	151	220	99
Tillamook	356	1	.....	43	196	6	110
Umatilla	1,822	.....	12	118	793	81	818
Union	589	.....	.....	12	227	232	118
Wallowa	808	.....	.....	7	256	70	475
Wasco	749	.....	.....	28	162	555	4
Washington	1,192	5	28	246	648	86	179
Wheeler	392	.....	.....	7	70	30	285
Yamhill	768	3	25	101	631	.....	8
Totals, County Roads	35,551	110	382	2,168	13,167	4,772	14,952
National Forest Roads	12,167	.....	.....	74	3,085	9,008	.....
National Park Roads	73	.....	33	10	12	12	.....
Indian Reservation Roads	1,360	.....	2	.....	61	576	721
State Forest Roads	729	.....	.....	.....	160	479	90
State Park Roads	7	.....	.....	.....	7	.....	.....
Military Reservation Roads	5	.....	5	.....	.....	.....	.....
Non-highway City Streets	2,704	350	770	222	1,128	234	.....
Totals, all roads other than state highways	52,590	460	1,192	2,474	17,620	15,081	15,763

Table No. 33

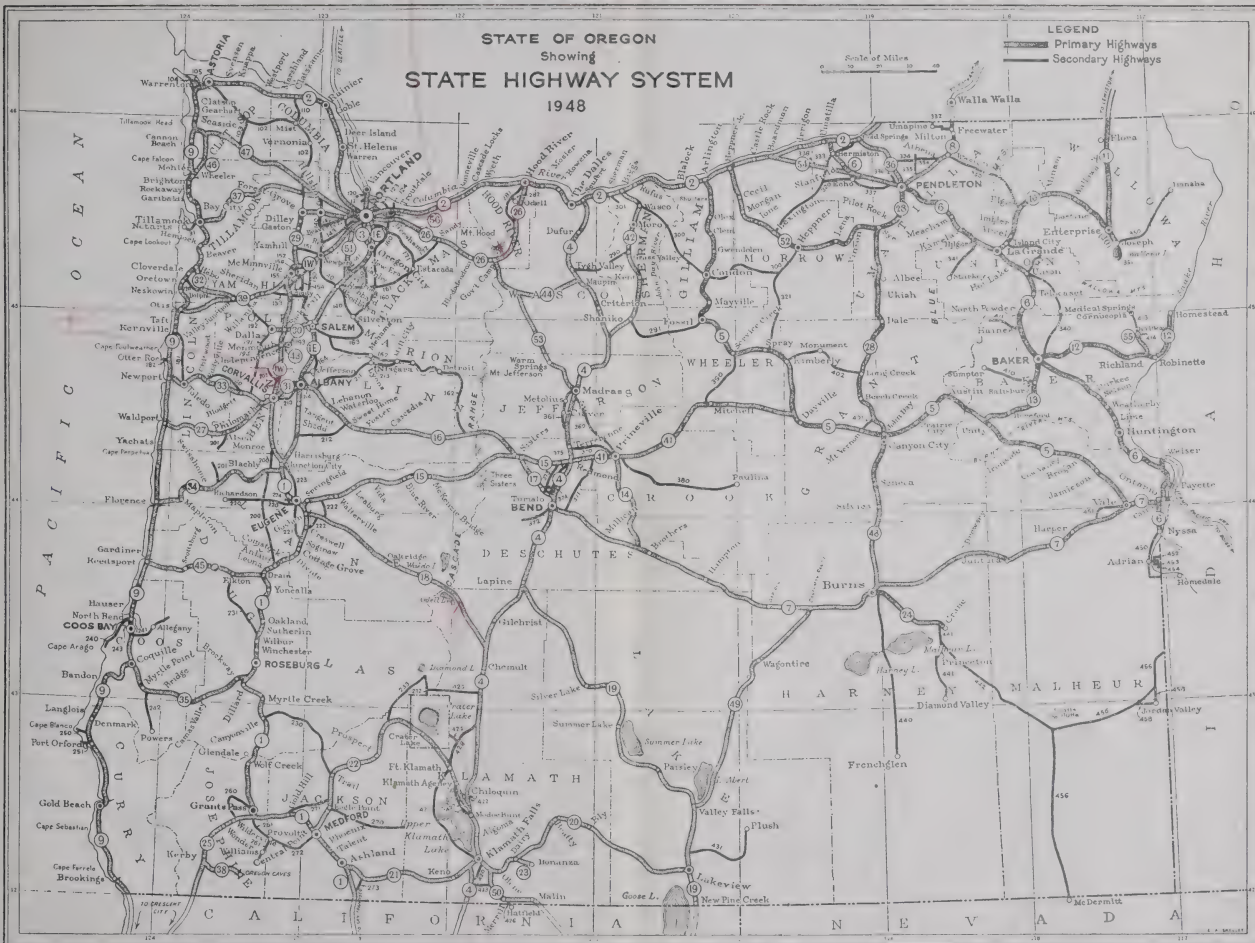
LIST OF PERSONS RENDERING PROFESSIONAL OR SPECIAL SERVICES

July 1, 1946 to June 30, 1948

Name and Address	Nature of Service	Compensation
Ambler, D. B., Waldport	Property appraisals	$ 25.00
Atwood, Frank, Waldport	Property appraisals	25.00
Automotive Safety Foundation, Washington, D. C.	Compilation of highway transportation system report for Legislative Interim Committee	1,721.78
Baker, F. A., Stanfield	Property appraisals	25.00
Baumback, A. C., Sandy	House moving estimate	15.00
Bedell, C. J. and O. E., Eugene	Property appraisals	15.00
Berry, Claude, La Grande	Property appraisals	50.00
Bliven, Wm., Salem	Property appraisals	71.00
Brown & Brown, Portland	Property appraisals	100.00
Campbell, Merle G., Portland	Property appraisals	150.00
Caufield, R. P., Oregon City	Property appraisals	25.00
Chilcote, E. M., Klamath Falls	Property appraisals	10.00
Childs, Leo N., Salem	Property appraisals	25.00
Christensen, L. M., Yachats	Property appraisals	22.50
Clough, Huron, Canyonville	Property appraisals	75.00
Collins, J. C., Medford	Property appraisals	5.00
Commonwealth Inc., Portland	Property appraisals	300.00
Currin, A. W. and Laura, Hillsboro	Property appraisals	25.00
Dieck, Robert G., Portland	Property appraisals	200.00
Dimmick, Geo. W., Roseburg	Property appraisals	50.00
Dodd Agency, E. P., Hermiston	Property appraisals	25.00
Dryer Co., H. A., Portland	Property appraisals	1,025.00
Fine, W. D., Enterprise	Property appraisals	10.00
Fleming, J. K., The Dalles	Property appraisals	15.00
Fries, Sam, Portland	Property appraisals	230.00
Fullerton, L. A., Milton	Witness fees	28.20
Gates, C. E., Tillamook	Property appraisals	16.00
Graham & Co., Wm. L., Delake	Property appraisals	25.00
Green, W. W., Pendleton	Property appraisals	35.00
Griffith, E. A., Hillsboro	Property appraisals	25.00
Griffith & Meek, Hillsboro	Property appraisals	25.00
Henry's Charles, Seaside	Property appraisals	20.00
Hodge, E. L., Portland	Geologic inspection	150.00
Hodgson, J. R., Newport	Property appraisal and witness fees	40.80
Howland, A. C., Oregon City	Property appraisals	25.00
Kelley, Roy F., The Dalles	Property appraisals	15.00
Kelly, K. F., Salem	Property appraisals	15.00
Kilgore, Leo A., Salem	Preparation of forms	200.00
Krueger, W. G., Salem	Property appraisals	25.00
Lambert, Wm., Agate Beach	Property appraisals	25.00
McClallen, R. D., Enterprise	Property appraisals	25.00

Ralph Watson

Name and Address	Nature of Service	Compensation
McEwen, Ralph B., Baker	Property appraisals	50.00
Meinert, Leslie, Albany	Property appraisals	15.00
Mencke, J. E., Eugene	Property appraisals	50.00
Mesick, R. S., Canyonville	Property appraisals	75.00
Miller, C. A., Enterprise	Property appraisals	25.00
Morrison, W. H., Pendleton	Property appraisals	206.00
Naegeli, John, Tillamook	Property appraisals	75.00
National City Bank, New York	Bond handling expense	1,014.09
Nelson, Roy W., Corvallis	Property appraisals and witness fees	500.00
Ortman, W. J., Enterprise	Property appraisals	25.00
Peck, J. E., The Dalles	Engineering services	63.05
Richards, A. A., Salem	Court reporting	26.50
Robertson, W. R., Salem	Property appraisals	70.00
Rodman, James A., Eugene	Property appraisals	230.00
Ross, Wm. L., Portland	Witness fees	14.00
Rugh, Loyall R., Eugene	Property appraisals	100.00
Schild, John, Tillamook	Property appraisals	75.00
School of Business Ad. (U. of O.) Eugene	Report on industrial development	49.30
Schumacher, R. J., Medford	Property appraisals	5.00
Seabold, Harry M., Hillsboro	Property appraisals	35.00
Thomas, W. K., Portland	Property appraisals	100.00
Ulrich Co., J. F., Salem	Property appraisals	25.00
Wakefield-Fries & Woodward, Portland	Property appraisals	100.00
Woodward & Draper, Portland	Property appraisals	375.00
Young, Roy O., Roseburg	Property appraisals	175.00


STATE OF OREGON
Showing
STATE HIGHWAY SYSTEM
1948
LEGEND
Primary Highways
Secondary Highways
Scale of Miles
PACIFIC OCEAN
CALIFORNIA
NEVADA
IDAHO
WASHINGTON
Walla Walla
Astoria
Warrenton
Seaside
Cannon Beach
Tillamook
Portland
Vancouver
Hood River
The Dalles
Arlington
Pendleton
La Grande
Enterprise
Joseph
Baker
Huntington
Ontario
Nyssa
Vale
Burns
John Day
Canyon City
Prineville
Redmond
Bend
Madras
Salem
Albany
Corvallis
Newport
Eugene
Springfield
Florence
Reedsport
North Bend
Coos Bay
Coquille
Bandon
Port Orford
Gold Beach
Brookings
Roseburg
Grants Pass
Medford
Ashland
Klamath Falls
Lakeview
Frenchglen
McDermitt
Jordan Valley
Heppner
Condon
Fossil
Mitchell
Dayville
Lapine
Gilchrist
Chemult
Silver Lake
Summer Lake
Valley Falls
Plush
Paulina
Crater Lake
Diamond Valley
CLATSOP
COLUMBIA
TILLAMOOK
WASHINGTON
MULTNOMAH
CLACKAMAS
YAMHILL
POLK
MARION
LINCOLN
BENTON
LINN
LANE
DOUGLAS
COOS
CURRY
JOSEPHINE
JACKSON
KLAMATH
LAKE
HOOD RIVER
WASCO
SHERMAN
GILLIAM
MORROW
UMATILLA
UNION
WALLOWA
BAKER
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